Part 103
Ultralight Vehicles

This edition replaces the existing loose-leaf Part 103 and its changes.

This FAA publication of the basic Part 103, effective October 4, 1982, incorporates Amendments 103-1 through 103-4 with preambles.

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Bold brackets **[ ]** throughout the regulation indicate the most recent changed or added material for that particular subpart. The amendment number and effective date of new material appear in bold brackets at the end of each affected section.

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Subpart A—General

Subpart B—Operating Rules

SUMMARY: This amendment establishes rules governing the operation of ultralight vehicles in the United States. The rule defines ultralight vehicles in two categories: powered and unpowered. To be considered an ultralight vehicle, a hang glider must weigh less than 155 pounds; while a powered vehicle must weigh less than 254 pounds; is limited to 5 U.S. gallons of fuel; must have a maximum speed of not more than 55 knots; and must have a power-off stall speed of not more than 24 knots. Both powered and unpowered ultralight vehicles are limited to a single occupant. Those vehicles which exceed the above criteria will be considered aircraft for purposes of airworthiness certification and registration, and their operators will be subject to the same certification requirements as are aircraft operators. These rules for ultralight vehicles are needed to achieve an acceptable level of air safety by reducing potential conflict with other airspace users and to provide protection to persons and property on the ground.

The rule governs the operation of ultralight vehicles by specifying the airspace which requires prior authorization of Air Traffic Control (ATC), prohibiting operations over congested areas, and providing for operations during twilight hours with proper lighting. Right-of-way and minimum visibility rules are also established.

The FAA has chosen not to promulgate Federal regulations regarding pilot certification, vehicle certification, and vehicle registration, preferring that the uultralight community assume the initiative for the development of these important safety programs. The ultralight community is expected to take positive action to develop these programs in a timely manner and gain FAA approval for their implementation. Should this approach fail to meet FAA safety objectives, further regulatory action may be necessary.

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SUPPLEMENTARY INFORMATION:

Background

The FAA issued Advisory Circular No. 60–10, entitled "Recommended Safety Parameters for Operation of Hang Gliders" on May 16, 1974. That advisory circular contained recommended safety parameters for the operation of sport hang gliders, in lieu of formal Federal regulation. The advisory circular defined "hang glider" as "an unpowered, single place vehicle whose launch and landing capability depends on the legs of the occupant and whose ability to remain in flight is generated by natural air currents only."

The sport of hang gliding has advanced dramatically since Advisory Circular No. 60–10 was issued. There is now widespread use of powerplants, landing gear, and movable control surfaces to increase the speed, altitude, and distance capabilities of the vehicles. Many models have passenger-carrying capability. As a result of those developments, many hang gliding vehicles no longer fall within the scope envisioned by Advisory Circular No. 60–10. The addition of powerplants and controllable aerodynamic surfaces has created vehicles which can approximate the operational capabilities of fixed-wing and rotary-wing aircraft.

The increasing performance capabilities of these vehicles, and their greatly increased number, have created a potential hazard to other aircraft and operators, as well as to the ultralight operators themselves. As the result of aerodynamic improvements, many unpowered hang gliders are now capable of extended soaring to altitudes exceeding 10,000 feet above the point of launch and distances of over 100 miles. The powered hang gliders now have the capability of sustained flight above 10,000 feet and forward speed exceeding 50 knots. The operations of these vehicles are now a significant factor in aviation safety. The vehicles are routinely operated, without authorization, into regulated airspace, such as airport traffic areas, terminal control areas, positive control areas, and prohibited and restricted areas. Many operations have also taken place over congested areas and spectators and into adverse weather conditions in which operations may be conducted by pilots and aircraft which are qualified for instrument flight

lights.

(2) On April 11, 1981, a Western Airlines 727 captain reported a near-miss with an ultralight vehicle in the vicinity of Phoenix Sky Harbor Airport.

(3) In May of 1981, the pilot of a single engine aircraft reported a near-miss with an ultralight vehicle near Paso Robles, California. According to the report filed under the FAA Aviation Safety Reporting Program, the ultralight was operating at 7000 feet in IFR weather conditions. The airplane pilot, who was operating on an IFR flight plan, was forced to take evasive action to avoid a collision.

To establish regulations to deter flights which present a serious danger to aircraft and to provide a basis for necessary enforcement action, the FAA published Notice of Proposed Rulemaking No. 81–6 on July 27, 1981 (46 FR 38472). That Notice proposed to include both powered and unpowered hang gliders under the generic term ''ultralight vehicle'' and included proposed weight and fuel limitations for those vehicles. The Notice proposed a number of operational limitations for ultralight vehicles, while recognizing that the vehicles are used primarily for sport purposes. More than 2,500 persons and organizations submitted comments to that proposed rule. This rule is the result of FAA consideration of those comments in light of its responsibility for safety in the National Airspace System. Because of the growing significance of this segment of the aviation community, the new rules have been codified under a new Part of the Federal Aviation Regulations, Part 103.

THE RULE

Subpart A—General

Section 103.1 Applicability (proposed § 101.1(a)(3)).

This section defines the term ''ultralight vehicle.'' The proposed rule would have limited the term to single-occupant designs weighing less than 155 pounds, with a fuel capacity of 15 pounds or less, and which had no U.S. or foreign airworthiness certificate. The final rule expands the definition to differentiate between powered and unpowered ultralight vehicles. The 155-pound weight limitation has been retained for unpowered designs and is the only criterion for those vehicles. Those ultralights equipped with powerplants must weigh less than 254 pounds empty weight. In addition, powered ultralight vehicles must have a fuel capacity not exceeding 5 U.S. gallons and be incapable of more than 55 knots calibrated airspeed at full power in level flight. The power-off stall speed of a powered ultralight must not exceed 24 knots calibrated airspeed.

The rule restricts both powered and unpowered vehicles to single occupants and requires that the aircraft be used exclusively for sport or recreational purposes.

The FAA estimates that nearly all unpowered vehicles currently on the market will fall within the definition of ultralight vehicle. The new criteria will exclude approximately 7% of the powered vehicle designs currently being marketed as ultralights, although many of those may be suitable for modifications to bring them within the scope of the definition.

Unpowered ultralight vehicles

A number of commenters, including the United States Hang Gliding Association (USHGA), object to the inclusion of ''pure'' hang gliders in the same definition as powered hang gliders. They raise the point that there are a number of distinctive operational differences between a pure hang glider and a powered vehicle which should be considered when assessing the necessity for regulations for these vehicles. The USHGA emphasizes its own self-regulation program and safety record.

The FAA recognizes that the measures taken by the USHGA to promote safety at USHGA launch sites have been effective, particularly those measures taken to protect the participants. However, the basic rationale for issuance of this rule is the safety of all users of the national airspace, not just the ultralight operators. The great majority of hang gliding operations will not be affected by these regulations because, as a number of commenters indicate, they are usually conducted in rural or remote areas, at low altitudes, away from areas where safety of other persons in the air or on the ground is compromised. It is only

of persons, and flights in close proximity to airports with large concentrations of airline and general aviation aircraft operations. Those potentially hazardous operations created the requirement for Federal regulatory limitations on hang gliders.

The proposed maximum weight restriction of less than 155 pounds was retained for unpowered ultralight vehicles to: (1) recognize the unpowered vehicles as a separate entity from those that are powered; and (2) ensure that the unpowered vehicles continue to meet essentially the same criteria that prevented their being classified as conventional gliders. Under this rule, those unpowered vehicles weighing 155 pounds or more must be certificated under the appropriate FAR's. No specific comments were received which objected to the 155-pound limitation on unpowered vehicles.

Powered ultralight vehicles

A large number of commenters request that the proposed maximum empty weight of 155 pounds be raised for powered ultralight vehicles. The suggestions range from 180 to 350 pounds. The reasons offered include greater structural integrity, more opportunity for design innovations, and the fact that many of the vehicles presently operated exhibit all of the other characteristics generally attributed to ultralights but weigh more than the proposed weight limit.

The FAA, by review of ultralight advertisements as of March 1982, has concluded that the empty weights of most of those vehicles range from 150 to 250 pounds. It was further concluded that the higher weights resulted from improvements which provide greater structural integrity, better stability, more positive controllability, and other safety-oriented additions which do not derogate the characteristics commonly associated with ultralight operations. Those characteristics are identified as low forward speeds, low wing loadings, low stall speeds, short takeoff and landing capability, and no enclosures around the pilot.

Some commenters suggest that limitations of 220 pounds or 330 pounds be adopted because they are "international standards." This is not correct. Canada, England, and Australia adopted 220 pounds as the maximum weight for a particular category of aircraft. In those countries, even if the weight limitation is met, the aircraft must be certificated and the pilots licensed. The 330-pound limit was established by the Federation Aeronautique Internationale for a category called "microlight aircraft." That category was established merely for the purpose of recording performance achievements of a particular group of aircraft.

The FAA agrees that the weight limitation for powered ultralight vehicles should be raised from the proposed 155 pounds. The 254-pound limitation was established because it closely corresponds to commenters' recommendations that the weight limitation be raised to at least 115 kilos, and because the vast majority of current vehicles on the market weigh less than 254 pounds. This weight does not include floats or safety devices intended for deployment in an emergency situation, e.g., parachutes and the harnesses and ballistic package necessary for deployment.

A large number of commenters recognize that, if the weight were raised, some restriction would have to be imposed to ensure that the characteristics associated with ultralights would be preserved. Those commenters include organizations such as the Experimental Aircraft Association (EAA), the Aircraft Owners and Pilots Association (AOPA), and the Professional Ultralight Manufacturers Association (PUMA).

The restrictions they propose range from simple wing loading values to complex aerodynamic formulas. They include maximum wing loading suggestions, minimum wing areas in relation to weight, maximum power capabilities in relation to weight, and calculations of launch mass. Some commenters suggest, and the FAA considered, that the pilot be required to be exposed fully to the relative wind. This requirement was dropped to accommodate cold weather operations and to avoid stifling design and efficiency improvements within the parameters of an ultralight vehicle.

The maximum forward airspeed limitation was selected by the FAA because it is faster than almost all ultralight vehicles currently being sold but still places those vehicles in a significantly slower performance category than conventional aircraft. The determination and enforcement of this speed limitation is within the capability and resources of the FAA under the inspection requirements of the rule.

vehicles currently on the market. The stall speed is easily determined through a simple calculation using information which is readily available to the FAA inspector when inspecting a specific vehicle.

The total allowable fuel capacity was raised from the proposed 15 pounds to 5 U.S. gallons. The decision to increase the volume of fuel is a direct result of the desire by the FAA, in response to public comments, to ensure that adequate fuel reserves are available for safe flight.

Single Occupant

The rule limits both powered and unpowered ultralight vehicles to a single occupant. A few commenters suggest that two-seat versions be available for carrying passengers or for training purposes. The basis for allowing ultralight vehicles to operate under special rules which do not require pilot and aircraft certification is the "sport" aspect of the operation. For example, the assumption can be made that a person who elects, without pilot qualifications, to operate an uncertificated vehicle alone is fully aware of the risks involved. This assumption does not hold true of a passenger selected randomly from the general public. Persons in the general public will likely assume that the operator has certificated pilot qualifications. Because pilot qualifications are not controlled or monitored, the single-occupant requirement is a necessary component in the continuation of the policies which allow the operation of ultralight vehicles free from many of the restrictions imposed on aircraft. Persons wishing to operate two-place vehicles have the availability of existing provisions of the FAR's for conducting such operations.

Recreation or Sport Purposes Only

Recent activities and advertisements in ultralight-oriented publications (included in the docket) imply that commercial operations may be conducted by an uncertificated pilot in an ultralight which has not been certificated as an aircraft. Those types of operations are not allowed under the rule.

Several commenters suggest that ultralight vehicles be limited to sport or recreational purposes only. The position of the FAA has consistently been that these vehicles may be operated for sport and recreation purposes only. The justification for allowing the operation of these vehicles without requiring aircraft and pilot certification has been that this activity is a "sport" generally conducted away from concentrations of population and aircraft operations. Like any sport, the participants are viewed as taking personal risks which do not affect others not involved in the activity.

Section 103.3 Inspection requirements (proposed § 101.55).

This section ensures the FAA's authority to inspect ultralight vehicles for compliance with the limits specified in § 103.1 and is retained in the final rule as proposed in Notice No. 81–6.

A large number of commenters object to the inspection requirements, believing that considerable FAA manpower and resources would be required in this effort. The USHGA and its membership contributed a majority of the objecting comments, citing the remoteness of hang gliding sites as impractical for the FAA to monitor.

Given the current level of ultralight activity, the FAA is confident that enforcement of the provisions of Part 103 can be accomplished with the existing resources. As is the case today, many investigations of suspected violations are prompted by reports received from pilots, air traffic controllers, citizens, and other sources. The FAA foresees no appreciable increase in the number of these reports as a result of this rule.

Section 103.5 Waivers

In proposing to include ultralight operations under Part 101, ultralights would have been eligible for the waiver provisions applicable to all operations under that Part. By removing the ultralight proposal from Part 101, the waiver eligibility for ultralights would have been lost. The FAA has concluded that the ultralight industry and the public would be best served by retention of waiver eligibility for these vehicles.

Thus, § 103.5 is added to the final rule, giving the ultralight operator the opportunity to apply for a certificate of waiver from any provisions of Part 103.

a continuation of burgeoning growth of the ultralight population could necessitate further regulation. The best practices and methods to preclude the need for further Federal regulation appear to at least include: self-regulation and self-policing, safety standards, membership in organizations and associations equipped to function and operate programs approved by the FAA, markings and identification of vehicles, programs including provisions similar to Federal Aviation Regulations relating to aircraft (both operation and airworthiness), etc.

FAA will continue to monitor performance of the ultralight community in terms of safety statistics, growth trends, and maturity and, if indicated, will take additional regulatory actions to preclude degradation of safety to the general public while allowing maximum freedom for ultralight operation. In summary, it should be emphasized that the individual ultralight operator's support and compliance with national self-regulation programs is essential to the FAA's continued policy of allowing industry self regulation in these areas.

Pilot Certification

A large number of commenters believe that there should be some requirement that pilots of ultralights be required to exhibit some knowledge and/or experience before being allowed to operate these vehicles. The suggestions range from no requirements to pilot certification under the requirements of Part 61. The general groupings of the comments are: (1) No certification; (2) required ground training on regulations and conventional aircraft operations; (3) required ground training and instructor sign-off for unsupervised solo operations; (4) successful passage of a written test, such as the FAA glider pilot written examination; (5) issuance of an Ultralight Pilot Certificate by the FAA based on satisfactory completion of an examination, and observed performance as the pilot of an ultralight; and (6) conforming to the certification requirements of Part 61 for student and private pilots.

The FAA endorses the ultralight community's efforts to develop and administer, under FAA guidelines, a national pilot certification program. At this time, however, pilots of ultralight vehicles are not required by Federal regulation to be certificated.

Aircraft Registration

Some commenters, primarily State and local governments, recommend that these vehicles be registered and be required to display their registration number. The reasons center around identification of any offenders. The FAA's experience in identification of offenders and processing enforcement action validates their recommendations. The FAA endorses the ultralight community's efforts to develop and maintain, under FAA guidelines, a national registration system which would be immediately accessible to the FAA. However, registration of ultralight vehicles will not be required by Federal regulation at this time.

Aircraft Certification

There are a small number of commenters who recommend additional Federal regulations requiring certification of ultralight vehicles to some design standards. The FAA has consistently refrained from the certification of these vehicles because they were operated by a single occupant for sport or recreational purposes. This policy is in accord with Federal regulatory policies regarding other sport activities. The pilots of these vehicles accept the responsibility for assuring their personal safety much as the driver of a moped street vehicle or a scuba diver does when engaged in his sport. The FAA has noted and commends the efforts of the USHGA to establish design standards and flight testing of new hang glider designs. The FAA endorses the development of similar standards and testing of new powered designs by the ultralight community. However, the FAA presently has no intent to require certification of these vehicles by Federal regulation.

Subpart B—Operating Rules

Section 103.9 Hazardous operations (proposed § 101.7).

This section prohibits any ultralight operator from engaging in activity which jeopardizes the safety of persons or property on the ground or in the air. The prohibition against hazardous flight or dropping

A large number of commenters request that flight during the twilight periods of the day be allowed since those are prime times to conduct ultralight operations. They state that meteorological conditions are often best during those periods and are characterized by a lack of wind and turbulence. The AOPA believes that calm air is particularly important for the novice flyer and provides an increased safety factor, especially during training when confidence building is essential. Many commenters believe that the available light is generally adequate to allow operations during those periods and that other craft could be safely avoided.

There are some commenters who believe that operations in Alaska should be excluded from the daylight operations section. They allude to the uniqueness of their "normal" day and how ultralight operations would be adversely affected.

Several comments support the original proposal and do not want operations during the nighttime hours. The primary concern centers around the difficulty in seeing these vehicles, especially at the higher altitudes, and the perceived inability of these operations to be conducted safely.

The FAA has observed ultralight operations during the twilight periods and has found the light available for such operations to be adequate in many instances. Operators were able to maneuver safely to avoid each other and also effect safe takeoffs and landings. Since most vehicles are operated at nearly the same altitude, they could be easily seen silhouetted against the lighted sky. Operations were conducted in relatively close proximity to each other, and each operator was readily aware of the others' presence. The mild weather conditions which generally prevailed during the twilight periods combined with the controllability and maneuverability of these vehicles to enhance the safety factor for flight.

The FAA is concerned, however, that unlimited operations of this type could pose a threat to aircraft which operate at higher speeds and higher altitudes. The number of potential encounters between aircraft and ultralights increases significantly as ultralights operate into areas normally traversed by certificated aircraft. Also, the ability of aircraft pilots descending into the lower altitudes to see ultralights would be minimal due to the darkened backdrop of the ground. Pilots would often not be aware of such operations taking place and could easily overrun an ultralight without ever having visual contact.

The FAA has adopted an alternative which provides an acceptable level of safety to aircraft while still allowing ultralights to operate in uncontrolled airspace during this period of the day. The FAA's conclusion on this issue is to disallow ultralight operations in controlled airspace during the period from sunset to sunrise. This affords aircraft operators the margin of safety to which they are entitled and, at the same time, leaves adequate airspace to the ultralight operator during a 30-minute twilight period.

The FAA has determined that the occasional aircraft operation in uncontrolled airspace during the twilight period should not entirely preclude ultralight operations. The visibility from above of ultralights operating at very low levels can be significantly enhanced by the addition of an anticollision light on these vehicles. Such a light would provide the descending aircraft pilot with a distinct indication of the ultralight's presence. Additionally, it would enable ultralight operators to better see and avoid each other.

For the purposes of ultralight operation, an anticollision light is defined as any flashing or stroboscopic device that is of sufficient intensity so as to be visible for at least 3 statute miles. This regulatory approach does not impose on the ultralight owner the economic burden associated with a certificated lighting system. The ultralight must remain in uncontrolled airspace, and the anti-collision light must be operating during the twilight periods whenever the vehicle is in motion. With respect to twilight operations in Alaska, the FAA recognizes that the periods of twilight are significantly different from those experienced in the lower latitudes. A review of the Air Almanac reveals that, in the upper latitudes, some days have no daylight periods but have over 4 hours of civil twilight. Civil twilight is defined as the period between official sunset and sunrise when the sun is less than 6 degrees below the horizon.

Regulations currently exist in Parts 91 and 101 which acknowledge the need to grant special allowances for operations in Alaska after sunset, and the FAA has determined that ultralights are entitled to the same consideration. Therefore, a provision to permit ultralight operations in Alaska during civil twilight

The comments regarding right-of-way range from those who believe that unpowered ultralight vehicles should have the right-of-way over all other vehicles and aircraft to those who believe that the requirements of § 91.67 should be adopted, with unpowered ultralights being grouped with gliders and the powered ultralights grouped with airplanes. The most salient reasons cited include lack of maneuvering ability and inability to change location in the air quickly.

The suggestions and associated rationale do not reveal any areas which had not been considered during the formulation of the NPRM. The FAA has determined that uncertificated sport operations should not be given the right-of-way over all other aircraft. The small size and sport nature of the operations is a major factor in that determination. It is unlikely that the pilot of aircraft will be able to see the ultralight vehicle as readily as the pilot of the ultralight vehicle will be able to see or hear the larger aircraft. Due to the forward speeds of the majority of aircraft, it may be impossible for the aircraft to make sudden changes of direction required to avoid small objects sighted at close quarters. The FAA recommends that operators engaged in ultralight operations avoid, if possible, areas where significant operations of aircraft are occurring so as to minimize the risk of midair collisions.

Some ultralight operators express concern that, if they are not given the right-of-way over aircraft, the pilots of those aircraft might deliberately fly in close proximity to the ultralights. In situations where this act can be substantiated, an investigation will be initiated to determine whether the pilot of the conventional aircraft operated in a careless or reckless manner in violation of § 91.9.

Some commenters recommend the establishment of areas where ultralight operations could be conducted and all aircraft operations would be prohibited. While the FAA has undertaken to identify locations on aeronautical charts where a specialized aeronautical activity, such as parachute jumping or gliding, is being conducted, no action is anticipated which would restrict other types of aeronautical activities in those areas and, similarly, no such action is contemplated for ultralights.

Section 103.15 Operations over congested areas (proposed § 101.47).

The proposed prohibition of ultralight vehicle operations over congested areas is retained in the final rule. The comments favoring an easing of the proposed rule focus on three main areas: (1) Those who favor permitting operations with a minimum altitude ranging from 1,000 to 3,000 feet AGL; (2) those requesting that the minimum altitude requirements of § 91.79 be allowed; and (3) those who believe that no minimum altitude should be specified, especially for unpowered vehicles, due to the short field ability and small size of the vehicles.

The representatives of cities and towns who commented generally favor the prohibition, believing that uncertificated aviation activities have no place over congested areas.

The FAA's position is based on the fact that ultralight vehicles are not certificated as airworthy by any approved method and are flown by uncertificated pilots for sport or recreational purposes only. Similar limitations apply to the operations of experimental and restricted category aircraft based on catastrophic incidents which have occurred in the past. The potential for such an incident makes the general issuance of the suggested authorization unacceptable. The FAA believes that concentrations of the general public must be protected from the possible dangers inherent in the operations of vehicles of uncertificated, possibly unproven designs. In specific limited instances, with appropriate operational limitations, ultralight operations may be approved over congested areas, through the waiver provisions of § 103.5.

Section 103.17 Operations in certain airspace (proposed § 101.45).

The NPRM proposed to require the ultralight operator to obtain authorization prior to operating within airport traffic areas, control zones, terminal control areas, and positive controlled airspace.

Operators of aircraft commented that the speed and visibility of ultralights are incompatible with other operations and that they should not be allowed at all in those areas. Some even suggest that a maximum operating altitude, such as 3,000 feet AGL, be imposed on all ultralight operations.

Although the subject was not addressed in the NPRM, some commenters voice concern about ultralight operations conducted at or near uncontrolled airports, with many persons noting a need to develop standard operating procedures. The FAA agrees with the need to establish a compatible method of operation at uncontrolled airports but believes that the variables associated with each locality (terrain, runway configuration, and the physical properties of the airport) combine in such a manner to preclude a generalized nationwide regulatory approach. The FAA has concluded that such operations could be handled much more efficiently by airport managers developing local procedures in concert with the ultralight community. In this way the available facilities can be used to the full extent while operational safety is maintained. Additionally, the interaction of the ultralight operators and the airport managers will serve as a basis for mutual understanding of the role this growing segment of aviation will play in the years ahead. The FAA encourages and supports efforts to reach such agreements and has been working with user groups in the development of guidelines for ultralight operations at uncontrolled airports.

Section 103.19 Operations in prohibited or restricted areas.

In the NPRM, requirements for operations of ultralights were included under the provisions of § 101.5.

In the final rule, the requirement for ultralight operators to obtain authorization prior to operating in prohibited or restricted areas is retained and restated under § 103.19.

Prohibited areas have been developed to provide for the safety and security of operations being conducted and to segregate activities considered to be hazardous to nonparticipating aircraft. Such operations in these areas include military and presidential security, flight training and testing, experimental weapons testing, and the launch and recovery of rocket-powered vehicles.

Many commenters recognize the need to limit access to these operating areas and accept the requirement to obtain permission prior to operating in these areas. A few commenters believe that this restriction should not apply to them and that ultralight vehicles should be allowed to operate at their own risk.

The FAA has determined that allowing any aeronautical activity to enter prohibited or restricted areas without prior authorization would derogate the purpose for which these areas were established. Avoidance of such areas by ultralight operators is not viewed as imposing a significant burden on ultralight operations.

Section 103.21 Visual reference to the surface (proposed § 101.51).

NPRM No. 81–6 proposed that ultralight operators be required to maintain visual reference to the surface during all flight operations. This would ensure that the operator of an ultralight would have the opportunity to descend and land safely at any time without entering obscuring weather phenomena.

Many commenters support the proposal as reasonable and representative of normal ultralight operations. They recognize the possibility of being caught "on top" and the danger, both to themselves and to other airspace users, of trying to descend through a layer of clouds. A few commenters believe that visual reference to the surface is necessary only while climbing or descending and not while in level flight.

The FAA has determined that visual reference with the surface is necessary at all times. Experience with certificated aircraft has shown that many pilots, with fully instrumented aircraft, have been caught "on top" and have required assistance from Air Traffic Control to descend safely. Flying "on top" or between cloud layers often presents visual illusions which cannot be verified without instrumentation. The effect of these illusions is to disorient the airman spatially, with a resulting loss of control of the craft. It takes a well-trained and disciplined pilot to ignore what information the human senses are providing and rely on the instrumentation aboard the aircraft.

In the case of ultralights, there is relatively little, if any, instrumentation with which to confirm the flight attitude of the vehicle. Further, if the ultralight operator should get caught "on top," there is no alternative available but to descend unannounced through the clouds. The ultralight operator would

The flight visibility and cloud clearance requirements proposed under § 91.105, the basic minima for VFR flight operations by fixed-wing aircraft. Since ultralight vehicles will be sharing the same airspace, the FAA has determined it is practical to apply the same operating minima.

Many commenters to this proposal are receptive to the similarity in visibility requirements for all airspace users. Many ultralight operators indicate-an appreciation for the inherent safety in being able to see and avoid obstructions and other aeronautical activities. Establishment of specific visibility standards is viewed as enhancing the legitimacy and the utility of ultralight operations.

Some commenters believed that the distance from clouds should be reduced to "clear of clouds." Their basis for such a change centers around the difficulty in determining actual distances from clouds.

Other commenters suggest that hang gliders be allowed to continue their practice of operating near and in the base of clouds. Their rationale is based on the added lift available from being in close proximity to cumulous clouds. Some hang glider operators fear that the restriction on in-cloud operations would eliminate their ability to vie for long-distance and high-altitude records.

The FAA cannot support the operation of ultralights in or near clouds. A specific distance from clouds is required when operating in controlled airspace, primarily due to the presence of aircraft conducting instrument flight operations through the clouds. The cloud clearance requirements serve as a practical buffer to reduce the possibility of having an aircraft exit the clouds on an unalterable collision course. Operating too close to clouds does, in effect, cause a blind side in the aviator's vision. Operation in and near clouds severely restricts the ultralight operator's ability to see and avoid, an ability that is paramount in allowing ultralight operations to take place.

In maintaining a safe distance from clouds, the FAA has concluded that ultralight operators can reasonably approximate, when operations are being conducted, the required distance from clouds. Experience with other segments of aviation has shown that it is readily apparent that, when operations approach an unsafe distance from clouds and adherence to the prescribed minimum distance determination becomes relatively easy. Therefore, retention of the flight visibility and clouds clearance requirements, as proposed, is essential for maintaining airspace safety.

Adoption of the Amendment

Accordingly, the Federal Aviation Regulations (14 CFR Chapter I) are amended, effective October 4, 1982, by adding to Subchapter F (14 CFR Chapter I) a new Part 103.

(Secs. 307,313(a), 601(a), 602 and 603, Federal Aviation Act of 1958 (49 U.S.C. §§ 1348, 1354(a), 1421(a), 1422, and 1423; sec. 6(c), Department of Transportation Act (49 U.S.C. § 1655(c)).

NOTE: The FAA has determined that this regulation is not a major rule under Executive Order 12291. Because the rule will regulate a new user segment and because of substantial public interest, it has been determined that it is a significant rule pursuant to the Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). The total projected costs of this rule may be found in a copy of the regulatory evaluation contained in the public docket. A copy of that evaluation may be obtained by contacting the person identified above under the caption "FOR FURTHER INFORMATION CONTACT." It is certified under the criteria of the Regulatory Flexibility Act that this rule will not have a significant economic impact on a substantial number of small entities. There are very few small entities involved in ultralight vehicle activities and the majority of those will be unaffected by the implementation of this rule.

SUMMARY: Federal Aviation Regulations (FAR) currently require ultralight vehicle operators to remain clear of prohibited and restricted areas, unless otherwise authorized by the using or controlling agency, but do not restrict ultralight operations in the vicinity of space flight operations or the proximity of the President. This final rule amends ultralight operating regulations to require that ultralight vehicle operators also remain clear of areas designated for space flight operations and areas in proximity to Presidential and certain other parties.

Comments concerning provisions of this regulation must be submitted by March 5, 1985.

ADDRESSES: Send comments on the rule in duplicate to the Federal Aviation Administration, Office of the Chief Counsel, Attn: Rules Docket (AGC–204), Docket No. 24454, 800 Independence Avenue, S.W., Washington, D.C. 20591. Comments may be examined in the Rules Docket, weekdays, except Federal holidays, between 8:30 am. and 5:00 pm.

FOR FURTHER INFORMATION CONTACT: Mr. Bill Davis, Office of Air Traffic Operations, Federal Aviation Administration, 800 Independence Avenue, S.W., Washington, D.C. 20591; telephone (202) 426–8783.

SUPPLEMENTAL INFORMATION:

Comments Invited

Interested persons are invited to participate the this regulatory action by submitting such written data, views, or arguments, as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions. Communications should identify the regulatory docket number and be submitted in duplicate to the above specified address. All communications received on or before the closing date for comments will be considered by the Administrator. Commenters who wish the FAA to acknowledge receipt of their comments must submit with those comments a self-addressed, stamped postcard on which the following statement is written: "Comments to Docket No. 24454." The postcard will be date/time stamped and returned to the commenter. The provisions in this rule may be changed in the light of comments received. All comments submitted will be available, both before and after closing date for the comments, in the Rules Docket for examination by interested persons. A report summarizing substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of Document

Any person may obtain a copy of this document by submitting a request to the Federal Aviation Administration, Office of Public Affairs, Attn: Public Information Center, APA–430, 800 Independence Avenue, S.W., Washington, D.C. 20591, or by calling (202) 426–8058. Communications must identify the docket number.

Background

On July 27, 1981, the FAA published Notice of Proposed Rulemaking No. 81–6 (46 FR 38472) and included in that proposal a number of operational limitations for ultralight vehicles. More than 2,500 persons and organizations submitted comments to that proposal. After consideration of those comments, on September 2, 1982, the FAA promulgated FAR Part 103 defining the operating requirements for ultralight vehicles (47 FR 38770). Those regulations became effective on October 4, 1982, and remain in effect today.

Need for Amendment

In recent months, there have been intrusions by aircraft into areas designated for space flight operations. Such intrusions have resulted in the disruption of launch and recovery operations and an increased concern for the safety of space flight support operations.

ignated areas. FAR Part 91, § 91.102 authorizes flight limitations in the proximity of space flight operations. Section 91.104 authorizes flight restrictions in the proximity of the President, Vice-President, and other public figures. FAR Part 103 prescribes rules governing the operation of ultralight vehicles. Sections 103.17 and 103.19 prohibit operation of an ultralight in various categories of controlled and special use airspace, including restricted areas and prohibited areas. However, neither Part 91 nor Part 103 expressly prohibits the operation of ultralight vehicles in areas designated for space flight operations, under § 91.102, or for Presidential security, under § 91.104.

In promulgating Part 103, it was the FAA's intent that ultralight operators comply with the same restrictions that are applicable to conventional aircraft operations in general under §§ 91.102 and 91.104. The preamble to Part 103 published in the Federal Register (47 FR 38775) cited both "Presidential security" and "the launch and recovery of rocket-powered vehicles" as grounds for the exclusion of ultralights from certain airspace. Neither Part 91 nor Part 103, as issued, contains language which technically prohibits ultralights from entering areas designated under §§ 91.102 or 91.104.

The FAA is concerned that continued absence of specific reference to §§ 91.102 and 91.104 flight restrictions in Part 103 may be construed by ultralight operators as permission to operate through these areas. Both the ultralight operator and the persons or operations for which the area is designated could be jeopardized by such flights, and the FAA remains convinced that any unauthorized ultralight vehicle operation in areas designated by §§ 91.102 or 91.104 results in an unsafe condition. In this respect, ultralight vehicles present the same potential threat as aircraft operated under Part 91, and the FAA believes that the provisions of §§ 91.102 and 91.104 should apply equally to both.

Because this amendment will serve to present disruption of space flight operations and infringement on secure areas for Presidential and other parties in the immediate future, I find that notice and public procedure hereon are not in the public interest and that good cause exists for making the regulation effective immediately. Because this amendment imposes no additional burden on ultralight vehicle operators, this document involves a rulemaking action which is not a major rule under Executive Order 12291 and is not a significant rule under Department of Transportation Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). The economic impact of this regulation is so minimal that a full regulatory evaluation is not necessary.

Adoption of the Amendment

Accordingly, Part 103 of the Federal Aviation Regulations (14 CFR Part 103, Subpart B—Operating Rules) is amended by adding § 103.20.

(Secs. 307 and 313(a), Federal Aviation Act of 1958, as amended (49 U.S.C. §§ 1348, 1354(a)); 49 U.S.C. § 106(g) (Revised, Pub. L. 97–449, January 12, 1983); and 14 CFR 11.45.)

Amendment 103–2

Airport Radar Service Areas

Adopted: February 27, 1985 **Effective: March 14, 1985**

(Published in 50 F.R. 9252, March 6, 1985)

SUMMARY: This action adopts certain National Airspace Review. (NAR) recommendations concerning air traffic rules governing flight operations within airspace designated as "airport radar service area (ARSA)." Specifically, this action defines "airport radar service area" and establishes air traffic rules for operation within such an area. The initial airport radar service areas are established under separate rulemaking actions in Airspace Docket No. 84–AWA–31 for the Robert Mueller Municipal Airport, Austin, TX; the Port Columbus International Airport, Columbus, OH; and the Baltimore/Washington International Airport, Baltimore, MD. Future notices will propose airport radar service areas for other locations.

plan encompasses a review of airspace use and the procedural aspects of the air traffic control (ATC) system. The three main objectives of the NAR are:

(1) To develop and incorporate into the air traffic system a more efficient relationship between traffic flows, airspace allocation, and system capacity. This will involve the use of improved air traffic flow management to maximize system capacity and improve airspace management.

(2) To review and eliminate, wherever possible, governmental restraints to system efficiency levied by Federal Aviation Regulations (FAR) and FAA directive-reducing complexity and simplifying the ATC system.

(3) To revalidate ATC services within the National Airspace System with respect to state-of-the-art and future technological improvements. This will entail a complete review of separation criteria, terminal control area/terminal radar service area (TCA/TRSA) requirements, instrument flight rules/visual flight rules (IFR/VFR) services to the pilot, etc.

Organizations participating in the NAR task group are:

Federal Aviation Administration

Department of Defense

Air Transport Association

National Business Aircraft Association

Regional Airline Association

Aircraft Owners and Pilots Association

Experimental Aircraft Association

Helicopter Association International

Air Line Pilots Association

NAR RECOMMENDATIONS PERTAINING TO THE PROPOSAL

The comprehensive plan contains an administrative structure and detailed task assignments which resulted in recommendations to the FAA, including the NAR Task Group 1–2.2 recommendations set forth below.

NAR 1–2.2.1 REPLACE TRSA's WITH AIRPORT RADAR SERVICE AREAS (ARSA's)

''The Task Group recommends that the current Terminal Radar Service Area (TRSA) program—Airspace and Services—be discontinued. The Task Group further recommends that the concept identified herein as [airport radar service area (ARSA)] be implemented as replacement for the TRSA program in accordance with the recommendations to follow.''

(The task group recommendations referred to the ARSA concept as ''Model B Airspace.'' References to ''Model B Airspace'' have been replaced with the term ''ARSA'' for consistency with the terminology used in the FAA rule.)

Pilots must comply with approved FAA traffic patterns when departing these airports.''

NAR 1–2.2.3 OUTER AREA LIMITS AND OPERATING REQUIREMENTS

''The Task Group recommends that the outer limit of [the area outside of the ARSA in which ARSA services are provided by an ARSA facility] be the same dimensions as the radar/radio coverage within each approach control's delegated airspace. While strongly encouraged, two-way radio communications is not a VFR requirement in [this airspace] and aircraft are not restricted from entering/transmitting this airspace.

NAR 1–2.2.4 ATC SERVICES

''Services provided within [an ARSA] shall be as follows: sequencing of arriving aircraft; IFR be provided standard IFR separation; IFR to VFR be provided traffic advisories and conflict resolution so that targets do not merge at the same altitude; and VFR to VFR be provided traffic advisories. Furthermore, aircraft operating outside [an ARSA but within the approach control's area of jurisdiction] will receive [ARSA] services upon establishing two-way radio communications and radar contact.''

[NAR 1–2.2.5 Not applicable to this proposal]

NAR 1–2.2.6 AIRSPACE DESIGNATION CRITERIA

''The Task Group recommends that, excluding TCA locations, all airports with an operational airport traffic control tower and currently contained within a TRSA serviced by Level III, IV, or V radar approach control facility shall have [an ARSA] designated; unless a study indicates that such designation is inappropriate for a particular location. Any other location serviced by a radar approach control facility may be considered as a candidate location [an ARSA] on the basis of a thorough staff study considering, but *not limited to,* the following:

1. Traffic mix, flow, density, and volume.
2. Airport configuration, geographical features and adjacent airspace/facilities.
3. Collision risk assessment.
4. ATC capabilities to provide [ARSA] services to the users at maximum benefit and minimum cost.

All proposed [ARSA] actions shall be subject to regional and headquarters approval. Military operated facilities will process requests through appropriate military and FAA channels. Any [ARSA] location which fails to meet the establishing criteria for its respective location for more than 12 consecutive months, shall be subject to a regulatory review to terminate the [ARSA] designation.''

NAR 1–2.2.7 CHARTING

''The Task Group recommends for further consideration by Task Group 1–6 that all [ARSA's] be charted, and that either a visual or narrative method of identifying the [area in which ARSA services are provided by an ARSA facility] be undertaken.''

2. Specific questions and answers must be required on all flight reviews and other appropriate occasions (air carrier initial and recurrent proficiency training, pilot proficiency exams, biennial flight review, etc.) to assure that users in every aviation community have shown a current understanding of radar terminal areas and their use of these areas.

3. The FAA develop and fund a traveling air traffic team to speak to pilot groups on operations within the National Airspace System; i.e., [ARSA]. Emphasis should be given to flight instructor contact.

4. An advisory circular dealing with [the ARSA program] be published to include well presented, up-to-date information on operations in terminal airspace and that this advisory circular be given the widest possible dissemination to aviation users and organizations.

5. The Airman's Information Manual (AIM) be distributed free of charge to all fixed-base operators (FBO's) at all public use airports.

6. FAA Public Affairs Office develop and promote through the general news media, aviation awareness of FAA services and publications available to the pilot and general public.

7. Facts about terminal airspace in some form of questionnaire be developed and distributed by the FAA to appropriate agencies (licensed pilots, fixed-base operators, business organizations, etc.). This questionnaire could be a public relations effort, advisory circular, or included in the Airman's Information Manual.

8. FAA continue to make available to interested pilot groups training or other audio-visual aids that deal with terminal radar operations.''

A copy of the task group's report is in the public docket.

The ARSA Confirmation

In Notice 83–9 [July 28, 1983; 48 FR 34286], the FAA stated that it believed in the merits of the task group's recommendations, and set forth aspects of those recommendations which could be confirmed under a proposed Special Federal Aviation Regulation (SFAR) at Austin, TX, and Columbus, OH. After reviewing the proposal in the light of the comments received, the FAA issued SFAR No. 45 [October 28, 1983; 48 FR 50038] to accomplish the confirmation.

The FAA contracted with Engineering and Economic Research, Inc. (EER) to analyze user operational experience with the ARSA's at Columbus and Austin. A copy of the EER analysis is in the docket. The FAA, itself, conducted random informal evaluations of ATC procedures which were also being confirmed. Informal discussion between FAA management and air traffic controllers at Columbus and Austin concerning ARSA operations and air traffic procedures were conducted routinely. These activities revealed that a significant majority of users approve of the ARSA concept in the NAR recommendations. The FAA also conducted a detailed analysis of comparative radar data gathered before and during the confirmation at Columbus, a copy of which is in the docket, and found that the ARSA produced a significant reduction in collision risk.

The FAA concluded that the confirmation at Columbus and Austin indicated probable benefits of the ARSA program for users at other locations. The confirmation also revealed an ARSA to be a practical replacement for a TRSA from an ATC procedural standpoint. On November 30, 1984, the FAA published Notice No. 84–22 which proposed air traffic rules governing flight operations within designated ARSA's (49 FR 47184).

Analysis of Comments

The FAA received 17 comments on the Notice of Proposed Rulemaking (NPRM) published November 30, 1984, in Docket No. 23708, in addition to 15 comments received earlier in the same docket in response to SFAR 45, which included a request for comments. Also, several comments received in the related Airspace Docket No. 84–AWA–31 contained remarks pertinent to Docket No. 23708, and were considered in the development of this rule. Those persons who have an interest in either proposal are encouraged to review the comments submitted in both dockets.

The comments received on the SFAR between December 1983 and August 1984 were generally critical of the ARSA concept, although not on the basis of actual experience with the Austin, TX, or Columbus, OH, ARSA's. Common comments were that the standardized ARSA airspace will not serve the intended purpose in areas of mountainous terrain, will discourage or preclude certain activities such as soaring near ARSA airports, and will inhibit free access to satellite airports within an ARSA. The FAA does not believe that any of the above criticisms constitutes an unsurmountable problem with establishment of the ARSA program or presents sufficient reason to depart from the general policy of establishing ARSA's in a standardized configuration. However, the actual configuration of any particular ARSA will take into consideration any unusual terrain features. Also, there are means to accommodate the presence of satellite airports and, where consistent with ATC safety and efficiency, VFR activities such as soaring. These measures are discussed in more detail below in connection with comments received in response to the most recent NPRM.

Comments received from organizations which participated in NAR Task Group 1–2.2 were generally supportive of the proposed ARSA rules. These groups included the Aircraft Owners and Pilots Association (AOPA), the Air Transport Association (ATA), the Experimental Aircraft Association (EAA), the National Business Aircraft Association (NBAA), the Regional Airline Association (RAA), and the Air Line Pilots Association (ALPA). In each case the above groups offered additional comments or requests which, together with other comments received, are discussed below by subject.

Establishment Criteria

Several commenters addressed the need for specific criteria for establishment (and disestablishment) of ARSA airspace at individual sites, rather than considering each existing TRSA as an automatic candidate for an ARSA. Recommended criteria included aircraft operations and passenger enplanements, proximity of other airspace complexes and other airports, and geography. AOPA also suggested that in addition to TRSA's, those TCA's which currently do not meet the standards for establishment of a new TCA also be considered as candidates for replacement by an ARSA. One commenter also requested that any specific criteria developed by FAA for establishment of an ARSA first be proposed in an NPRM and published in the *Federal Register* for comment.

FAA consideration of most TRSA sites as candidates for ARSA's is adopted in response to NAR Recommendation 1–2.2.1. Initially, only those TRSA locations which are served by a Level III, IV, or V terminal radar facility will be considered for establishment. In each case, an ARSA would be established only after issuance of an NPRM and the opportunity for public comment on the merits of an ARSA at the proposed location. The impact on the proposed ARSA of local geography, adjacent airspace configurations, and nearby airports would receive full consideration by FAA not only in determining appropriate adjustments to the configuration of the ARSA, but also in determining whether it would be appropriate to establish an ARSA.

FAA is currently in the process of developing specific quantitative criteria, such as traffic and passenger enplanements, for example, for proposing the establishment of ARSA's for locations that are not TRSA's or that are not served by a Level III, IV, or V approach control facility. FAA will issue the criteria before proposing such additional ARSA locations. FAA does not intend to develop the criteria through the formal rulemaking process, but will take into consideration all comments relating to establishment criteria received in the docket.

FAA has not proposed to consider any existing TCA's for potential replacement by ARSA's, and does not adopt such a policy at this time.

Potential Impacts

Comments critical of the proposal generally involved concerns about increased delays, the exclusion of certain user groups, and potential safety impacts. Several commenters were concerned that establishment of an ARSA would increase traffic delays in that area as a result of unnecessary separation standards, extensive vectoring, and the difficulty in contacting ATC due to frequency congestion. Because participation in existing TRSA's is high, and separation standards in an ARSA are less than those in a TRSA (radar separation standards in an ARSA are less than 1.5 mile lateral standard for participating aircraft in

A few commenters on the NPRM expressed concern that an ARSA would have the effect of excluding some VFR pilots, primarily recreational aircraft and sailplanes. The ARSA requirement for two-way radio communications does effectively preclude aircraft not having this basic communications capability from entering an ARSA, without special ATC authorization. FAA believes, however, in consideration of the safety benefits of the communications requirement, that the effects of the rule are limited and are fully justified. Moreover, as discussed below in connection with ARSA configuration, special procedures will be considered on a site-specific basis to permit access to nontower airports underlying an ARSA, without entering ARSA airspace. It may also be possible, at affected sites, to accommodate soaring and other recreational VFR flight activities in an ARSA through agreement with the controlling ATC facility. In the rulemaking which will precede the establishment of each individual ARSA, FAA will consider comments and suggestions on means for the safe and efficient accommodation of aviation activities which might otherwise be precluded by the proposed ARSA.

While none of the commenters on the NPRM claimed that an ARSA would reduce safety rather than enhance it, several safety-related issues were raised in comments on the NPRM and on the previous SFAR. One commenter suggested that controller workload would be substantially increased by the implementation of an ARSA. The FAA is confident that an increase in traffic will only result from the handling of aircraft not presently participating in the TRSA program and that any such increase would not cause a substantial increase in an individual controller's workload because of the present high level of participation in the TRSA program. However, if an ATC facility does experience a substantial increase in traffic handled, the FAA will take the necessary measures to ensure that adequate facilities and personnel are available to handle the increase.

Another comment was that the establishment of an ARSA, with its operating requirements, would lead many VFR pilots to avoid the ARSA, resulting in compression of traffic in adjacent areas. FAA does not believe that a significant number of pilots will choose to avoid ARSA airspace, given the minimum burden involved of contacting ATC. Also, the airspace taken by an ARSA is not extensive either laterally or vertically, and in most locations there is no reason to conclude that traffic circumventing the ARSA would be compressed into a confined area. A final safety-related comment received was the concern that provision of radar separation in an ARSA would generate a false sense of security in VFR pilots, and would undermine the duty to see-and-avoid other aircraft. See-and-avoid responsibility is not relieved or diminished in an ARSA, and FAA intends to make this responsibility clear in informational announcements and materials dealing with the ARSA program. However, FAA believes that any possible misperception of some pilots as to their see-and-avoid responsibilities in an ARSA environment, is an issue of pilot education, and does not support the nonadoption of the ARSA concept itself.

ARSA Configuration and Dimensions

Many of the commenters suggested changes to the ARSA dimensions as proposed, while others urged that no consideration be given to expansion of the proposed dimensions. Commenters generally supported the FAA policy of standardizing the dimensions of ARSA's, and NBAA in particular expressed concern at FAA's announced intention to consider ''customization'' of areas in certain circumstances. FAA has adopted the dimensions as proposed, and, in the absence of special circumstances, individual ARSA's will be proposed in the standard configuration. However, the existence of other airports or controlled airspace adjacent to the primary airport may present a situation in which the standard configuration is not feasible.

AOPA and EAA both requested that access to satellite airports within a proposed ARSA be protected. AOPA specifically requested that the traffic pattern of a satellite airport be excluded from the ARSA and depicted as a cutout from the ARSA on aeronautical charts. AOPA argued that traffic to and from satellite airports should not be required to participate in the ARSA, and that exclusion of the satellite airport traffic pattern from the ARSA is the only way to avoid pilot confusion. EAA suggested that access to satellite airports within the 5-mile core of an ARSA, without participation in the ARSA, could be allowed by retaining the provisions of FAR 91.85(b). Section 91.85(b) permits operation to and from the satellite airports in an airport traffic area. FAA believes that establishment of an ARSA will not necessarily have an adverse effect on access to satellite airports within the ARSA, and that where there

in situations where safety, traffic flow, or pilot understanding would be enhanced, the FAA will consider permitting unrestricted access to the airport below 1200 feet AGL. In such situations, cutouts would be depicted on the representation of the ARSA's on aeronautical charts.

AOPA renewed its request, first made in the NAR task group, that the upper limit of the ARSA airspace be set at 3000 feet above airport elevation rather than 4000 feet as proposed. This issue was considered by the NAR task group, and has been reconsidered by FAA in light of the operational experience at Austin and Columbus. Based on the majority recommendation of NAR Task Group 1–2.2, the comments of other users, and the experience with the Austin, TX, and Columbus, OH, ARSA's, FAA has retained the 4000 foot cap. FAA considers it desirable to have mandatory participation up to 4000 feet above airport elevation for the type of airports that will be eligible for the ARSA airspace designation, and we do not believe it necessary or beneficial to make the cap compatible with the upper limit of the airport traffic area, as AOPA suggests.

AOPA requests that the lower limit of the ARSA shelf be set at 1200 feet above the highest terrain in the 10-mile radius, and that the floor not be segmented to follow variations in terrain. FAA agrees that any segmenting of the floor in the 5- to 10-mile area should be kept to a minimum, but we believe that some segmenting will be appropriate in certain terrain situations. Each proposal to incorporate a segmented base altitude will be subject to further comment in the airspace rulemaking for that location.

Representatives of the Soaring Society of America and several individual sailplane pilots requested that in areas where soaring is now conducted within the proposed ARSA, either the ARSA be modified or special procedures be developed to permit the sailplane operations to continue without complying with ARSA communication requirements. FAA does not believe that a national policy of modifying the standard ARSA configuration or procedures is warranted, given the relatively small number of locations at which soaring would be conducted within an ARSA. However, at some proposed ARSA locations it may well be the case that there is substantial sailplane activity conducted in the local area, and that those sailplane operations could be adversely affected by the establishment of an ARSA. In those cases, FAA is willing to consider special procedures to accommodate the soaring, including arrangement with the local ARSA controlling facility to operate without radio equipment at certain times and in certain prearranged areas, if control and separation of other aircraft is not adversely impacted. Procedures for any particular location would be developed during the proposal and comment process, and would be specific to that location.

Finally, several commenters addressed the nonregulatory 20-mile limit of the area in which ARSA services are provided by ATC, but in which user participation is not required. NBAA found the 20-mile perimeter acceptable, but suggested that the areas of two adjacent ARSA's be connected. This suggestion will be considered in the airspace rulemaking at appropriate locations. ALPA objected to the 20-mile limitation and requested that radar service be provided to the limits of the controlling facility's radar coverage, as implemented during the operational confirmation. For the reasons discussed in the NPRM, FAA continues to believe that the 20-mile perimeter provides a high level of service to participating aircraft consistent with the resources of the local ATC facility, and, because of its uniformity, minimizes pilots' confusion about the services available.

Required Equipment

ATA requested that altitude-encoding transponders be required in addition to two-way radios for operation in an ARSA. FAA does not believe that transponders are required to effect the purposes of the TRSA program, and does not intend to propose a requirement for transponders in ARSA airspace.

EAA and the Soaring Society of America both expressed concern that the use of 25 kilohertz (kHz) frequency spacing, made possible by 720-channel radios, would constitute a hardship for operators of mail recreational aircraft having older 360-channel radio equipment. Because the rule requires two-way radio communications capability for operation in an ARSA. the use of the 25kHz spacing in ATC ARSA frequencies would effectively free these operators to upgrade their communications equipment. There is now a serious shortage of radio frequencies spaced at 100kHz intervals. The requirement for 720-channel

A number of other comments were made concerning matters of operations under an ARSA, such as ATC procedures and the representation of ARSA's on aeronautical charts, which do not affect the substance or justification of the rule itself. FAA will take these comments into consideration in implementing designated ARSA's, but will not address them here.

Adoption of NAR Recommendations

The FAA's action with respect to each of the aforementioned NAR recommendations is set forth below.

NAR 1–2.2.1 REPLACE TRSA's WITH ARSA's

While the adoption of this recommendation would indicate that the FAA is adopting all aspects of the other NAR recommendations addressed herein, the FAA has only adopted the aspect dealing with the discontinuance of TRSA's. The remaining aspects of this recommendation are treated individually. In that regard, all current TRSA locations will remain as such until they are canceled or converted to ARSA's. Additionally, ATC procedures dealing with TRSA's will remain in place and aeronautical charts will continue to depict each TRSA until it is cancelled or converted.

NAR 1–2.2.2 ARSA SIZE AND OPERATING REQUIREMENTS

The physical dimensions of the ARSA and the operating requirements recommended by the task group are adopted except that the floors of the airspace between 5 and 10 miles may be segmented and will be expressed in altitudes above mean sea level instead of AGL because of variations in terrain elevations. This deviation is in the spirit of the task group's recommendations and every effort will be made to ensure that the ARSA airspace between 5 and 10 miles of each ARSA is not segmented except as necessary.

Additionally, some customizing of ARSA's may be required due to proximity of satellite airports and other regulatory airspace designations. However, customizing will be held to the absolute minimum required and the FAA foresees no situation that would necessitate extension of the ARSA airspace beyond 10 nautical miles.

NAR 1–2.2.3 OUTER AREA LIMITS AND OPERATING REQUIREMENTS

While the limit that was operationally confirmed at Austin, TX, and Columbus, OH, coincided with the extent of the approach control facility's delegated airspace, the FAA may not always have the resources or capability to provide the ARSA service to those limits. Further the FAA believes flexibility must be retained in establishing limits because of considerations which include: Proximity to TCA's; clustering of ARSA's; terrain; unusually high level of activity not related to the ARSA airport operation, and radio/radar coverage. Accordingly, the limits of the airspace outside each ARSA within which ARSA services are provided will be depicted narratively on sectional charts in a manner similar to the method used for the confirmation. The procedures for establishing the limits will be implemented under the FAA directive system; therefore, user organizations will have another opportunity to provide comments regarding this subject.

NAR 1–2.2.4 ATC SERVICES

The ATC services that the task group recommended the FAA provide within the ARSA will be provided as recommended, and will be implemented under the FAA directives system. The services provided by ATC through mandatory participation in the ARSA will be available to pilots on a voluntary participation basis in other specified areas within the approach control's area of jurisdiction. These services will be in addition to the services and separation currently applied to aircraft operating under IFR. Specifically, ATC will: (1) Resolve potential conflictions between aircraft operating under IFR and aircraft operating under VFR by ensuring that 500 feet vertical separation exists between those aircraft or by ensuring that those aircraft's radar targets do not touch; and (2) provide traffic advisory service and arrival sequencing to aircraft.

The provision of ARSA services at any location is dependent upon operation of the local ATC facility. Hours of facility nonoperation, when ARSA requirements and services would not apply, may be specified in airspace rules for individual sites or by Notices to Airmen.

NAR 1–2.2.6 AIRSPACE DESIGNATION CRITERIA

This recommendation is adopted. The following is a list of TRSA locations that are candidates for conversion to ARSA's. In some cases under this recommendation, more than one ARSA would be created from a single TRSA; for example, there are three airports within the Ontario, CA, TRSA—Ontario International, March Air Force Base (AFB), and Norton AFB airports—that would be candidates for individual ARSA's. However each specific ARSA airport will be addressed separately in an NPRM.

ARSA Candidate Locations:

Anchorage, AK
Mobile, AL
Little Rock, AR
Burbank, CA
Ontario, CA
San Diego, CA
Windsor Locks, CT
Jacksonville, FL
Tallahassee, FL
Columbus, GA
Kahului, HI
Boise, ID
Peoria, IL
Evansville, IL
South Bend, IN
Lexington, KY
Lafayette, LA
Baltimore, MD
Grand Rapids, MI
Saginaw, MI
Billings, MT
Greensboro, NC
Omaha, NE
Reno, NV
Islip, NY
Syracuse, NY
Columbus, OH
Youngstown, OH
Portland, OR
Harrisburg, PA
Quonset Pt., RI
Greer, SC
Knoxville, TN
Amarillo, TX
Corpus Christi, TX
Midland, TX
Orlando, FL
Tampa, FL
Macon, GA
Cedar Rapids, IA
Champaign, IL
Rockford, IL
Fort Wayne, IN
Wichita, KS
Louisville, KY
Lake Charles, LA
Portland, ME
Kalamazoo, MI
Gulfport, MS
Charlotte, NC
Raleigh, NC
Atlantic City, NJ
Albany, NY
Rochester, NY
White Plains, NY
Dayton, OH
Oklahoma City, OK
Allentown, PA
Toledo, OH
Charleston, SC
Bristol, TN
Memphis, TN
Austin, TX
El Paso, TX
San Antonio, TX
Norfolk, VA
Burlington, VT
Green Bay, WI
Charleston, WV
Huntsville, AL
Abilene, TX
Tucson, AZ

Palm Springs, CA
Santa Ana, CA
Daytona Beach, FL
Cincinnati, KY
Baton Rouge, LA
Shreveport, LA
Flint, MI
Lansing, MI
Jackson, MS
Fayetteville, NC
Lincoln, NE
Alburquerque, NM
Buffalo, NY
Rome, NY
Akron Canton, OH
Moline, IL
Springfield, IL
Indianapolis, IN
Tulsa, OK
Erie, PA
San Juan, PR
Columbia, SC
Chattanooga, TN
Nashville, TN
Beaumont, TX
Lubbock, TX
Salt Lake City, UT
Richmond, VA
Spokane, WA
Madison, WI

NAR 1–2.2.7 CHARTING

This recommendation is adopted. Each ARSA will be depicted on aeronautical charts in a manner similar to the way Austin, TX, and Columbus, OH, locations are depicted.

NAR 1–2.2.8 EDUCATION

This recommendation is adopted to the extent set forth in Notice 84–22.

The Amendment

After consideration of the comments received, the FAA is adopting, with the exception of two editorial changes, the amendments to Parts 71, 91, 103, and 105 as they were proposed in Notice 84–22. The definition of an ARSA in new Section 71.14 has been revised for consistency with the definitions of other types of controlled airspace in Part 71. The revision has no effect on the operating rules for an ARSA or the extent of airspace involved. A second editorial revision was made to new Section 91.88. The phrase "or heliport" was deleted from the proposed section as unnecessary, because the term "airport" as defined in FAR Part 1, Section 1.1, includes heliports.

These amendments establish a new type of airspace assignments and prescribe operating rules for aircraft, ultralight vehicles, and parachute jump operations in that airspace.

Specifically, aircraft arriving at any airport in an ARSA, and overflying aircraft, prior to entering the ARSA must: (1) Establish two-way radio communications with the ATC facility having jurisdiction over the area; and, (2) while in the ARSA, maintain two-way radio communication with that ATC facility. For aircraft departing from the primary airport within the ARSA, two-way ratio communications must be maintained with the ATC facility having jurisdiction over the area. For aircraft departing a satellite airport or heliport within the ARSA, as soon as practicable after takeoff, two-way radio communications must be established and thereafter maintained, while operating within the ARSA, with the ATC facility having jurisdiction over the area.

All aircraft operating within an ARSA are required to comply with all ATC clearances and instructions and any FAA arrival or departure traffic pattern for the airport of intended operation. However, the proposed rule permits ATC to authorize appropriate deviations to any of the operating requirements of the proposed rules when safety considerations justify the deviation or more efficient utilization of the airspace can be attained. Ultralight vehicle operations and parachute jumps in an ARSA may only be conducted under the terms of an ATC authorization.

Accordingly. the FAA has determined that: (1) The amendment does not involve a major rule under Executive Order 12291; (2) the amendment is not significant nor does it require a full Regulatory Evaluation under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) it is certified that under the criteria of the Regulatory Flexibility Act that the amendment will not have a significant economic impact on a substantial number of small entities. In addition, this amendment, if adopted, would have little or no impact on trade opportunities for U.S. firms doing business overseas, or for foreign firms doing business in the U.S.

This article is published less than 30 days prior to its effective date of March 14. By separate rulemaking published this date, FAA has established ARSA's at Austin, TX: Columbus, OH; and Baltimore, MD, to take effect on March 14. March 14 is the next publication for enroute low altitude navigation charts published by the National Ocean Survey. Pilots rely on these charts for flight information, and FAA considers it a matter of flight safety that the implementation date for each ARSA coincide with the publication date of the air navigation chart depicting the ARSA. The permanent Austin and Columbus ARSA's and the Baltimore ARSA cannot be established unless this rule, which promulgates the definition and operating rules for ARSA's is in effect. If these ARSA's are not established on March 14. the next subsequent chart publication date, and the next date on which the three ARSA's could become effective, is in September. FAA considers the establishment of the ARSA at Baltimore Airport to be of immediate importance and cannot accept a 6-month delay in implementation of this ARSA. Furthermore, controller training, revised coordination procedures among adjacent ATC facilities, and equipment display modifications have been undertaken at all these locations in preparation for the March 14 effective date. A 6-month delay in implementation would have a disruptive effect on the ATC facilities involved. For these reasons, and in consideration of the fact that the final rule is substantially identical to the proposal, the FAA finds that good cause exists for making the rule effective less than 30 days after publication.

The Rule

For the reasons set out in the preamble, Chapter I of Title 14 of the Code of Federal Regulations is amended effective March 14, 1985.

(Secs. 307 and 313(a), Federal Aviation Act of 1958, as amended (49 U.S.C. 1348, 1354(a)); 49 U.S.C. 106(g) (Revised, Pub. L. 97–449, January 12, 1983); 14 CFR 11.45; and 14 CFR 11.65.)

Amendment 103–3

Revision of General Operating and Flight Rules

Adopted: August 7, 1989 **Effective: August 18, 1990**

(Published in 54 FR 34284, August 18, 1989)

SUMMARY: This amendment reorganizes and realigns the general operating and flight rules to make them more understandable and easier to use. Also, several changes are made to provide more flexibility for certain operations. These changes result from comments received from the general public and aviation industry in response to a request for specific comments to help identify substantive areas needing review.

EFFECTIVE DATE: This amendment becomes effective on August 18, 1990, except that § 91.203(a)(2) becomes effective September 18, 1989, and remains numbered as § 91.27(a)(2) until August 18, 1990.

FOR FURTHER INFORMATION CONTACT: William T. Cook (202) 267–3840 or Edna French (202) 267–8150, Project Development Branch (AFS–850), General Aviation and Commercial Division, Office of Flight Standards, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591.

The FAA received 106 comments in response to the ANPRM. An overwhelming majority of the commenters supported the intent of the proposal to reorganize Part 91. However, there were numerous problem areas identified by the commenters relating to the proposed changes that were considered substantive.

On November 18, 1980, the FAA formed a Part 91 Working Group to analyze the AOPA proposal and comments received on the ANPRM. It was determined that certain technical and administrative problems existed and that it was not feasible to undertake a substantive revision of Part 91 at that time. Subsequently, AOPA withdrew its petition. However, review of AOPA's proposal to reorganize and renumber Part 91 revealed that many of the changes had merit and could be implemented. The FAA Part 91 Working Group concluded that the reorganization and renumbering of Part 91 would be the first step to improve the regulation and make it more understandable and easier to use. Consequently, the FAA published NPRM No. 79–2A (46 FR 45256; September 10, 1981), which proposed to reorganize and realign the general operating and flight rules to make them more understandable and easier to use. Other proposals were made to delete redundancies and obsolete compliance dates and to make other minor changes.

Notice No. 79–2A did not contain any substantive changes; however, it did inform the public that the FAA considered that notice to be the first step in a regulatory review of Part 91 consistent with the objective of Executive Order 12291. With this in mind, the FAA invited additional specific comments to help identify substantive areas to be reviewed and possibly included in subsequent proposals concerning Part 91. The notice further stated that the FAA would not take final action concerning the reorganization until substantive changes were proposed and the public had been given an opportunity to comment on those proposals.

The FAA published Notice No. 79–2B (46 FR 60461; December 10, 1981) to extend the comment period for Notice No. 79–2A by 120 days. That notice was issued in response to a petition from the National Business Aircraft Association to allow additional time for commenters to prepare substantive comments.

The FAA received 69 comments in response to Notice No. 79–2A. The majority of these comments favored the proposal and were discussed in Notice No. 79–2C (50 FR 11292; March 20, 1985).

Notice 79–2C proposed four substantive changes in addition to the numerous changes made to reorganize and clarify existing rules. Two of these changes were made in response to comments received from the public. These changes are as follows:

(1) Section 91.117—Allows reciprocating-powered aircraft to be operated at 200 knots in an airport traffic area;

(2) Section 91.135—Allows operators desiring authorizations to deviate from positive control area and route segment requirements to utilize a 48-hour oral notification system;

(3) Section 91.409–Allows operators of turbine-powered rotorcraft to use an alternate inspection program, such as an FAA-approved inspection program; and

(4) Sections 91.205, 91.509, and 91.511—Defines "shore" as it is used in these sections to exclude tidal flats.

Public Comments

Forty-seven comments were received in response to Notice No. 79–2C. A number of commenters recommended regulations that were not proposed in the notice. Because such comments discuss matters which the public has not had an opportunity to consider, they are beyond the scope of the notice and cannot be considered without further notice and public participation. Some of these comments concern proposals that will be considered by the FAA in future rulemaking and, therefore, could be published in a future notice.

Two commenters are opposed to changing masculine gender. One commenter states that this would keep the text shorter and speed up the reading of the text. The other commenter states that § 1.3(a)(3) already provides that "words importing the masculine gender include the feminine," and the better course would be to refer to the "person," or the "pilot." The FAA agrees with these commenters. Accordingly, references throughout Part 91 that use the words "he" or "she" have been changed to refer to the "person," the "pilot," the "crewmember," or the "Administrator."

One commenter writes that the use of "pilot in command" and "PIC" is inconsistent in the proposed rules. The FAA agrees with this commenter and, accordingly, has changed references to "PIC" in §§ 91.123(a) and 91.129(b) to "pilot in command" to make their use consistent throughout Part 91.

A commenter suggests that all references to distances expressed in miles should state whether they are statute or nautical miles. The FAA agrees that such references should be clear. Accordingly, references to distance expressed in miles in §§ 91.171(b)(4)(ii) and 91.207(e)(3) are changed by adding the word "nautical" to reflect that the distances are expressed in nautical miles since they reference ground-measured distance. References to visibilities in §§ 91.155(b), 91.167(b)(2)(ii), and 91.303(e) are changed by adding the word "statute" to reflect that visibilities are expressed in statute miles.

Several commenters state that the proposed wording for § 91.1 implies that operations of moored balloons, kites, unmanned rockets, and unmanned free balloons are governed by Part 103. This comment has merit and § 91.1 is revised by adding a specific reference to Part 101 after the phrase "unmanned free balloons" to make clear that moored balloons, kites, unmanned rockets, and unmanned free balloons operate under Part 101.

Another commenter requests clarification of the discussion of § 91.7 in Notice No. 79–2C, where the FAA states that there is no provision for the use of an approved Minimum Equipment List (MEL) in Part 91 operations, whereas § 91.213 permits the use of an approved MEL. The FAA points out that at the time Notice No. 79–2C was published, the effective date of current § 91.30 (proposed § 91.213) was stayed indefinitely (44 FR 62884; November 1, 1979). Amendment No. 91–192 (50 FR 51188; December 13, 1985) which took effect on March 13, 1986, terminated the stay.

Section 91.7(b), which was proposed without substantive change from existing § 91.29, provides that a flight should be discontinued when unairworthy mechanical or structural conditions occur. One commenter suggests that this be changed by deleting "mechanical or structural" and making it more general so as to provide for a possible unairworthy electrical system. This suggestion raises a valid point; however, the FAA has determined that the rule should be amended to explicitly reference mechanical, electrical, or structural conditions. Therefore, § 91.7(b) is amended accordingly.

As suggested by one commenter, § 91.21(a)(1) is amended by deleting reference to a "commercial operator." This revision conforms § 91.21(a)(1) with SFAR 38–2 and Part 125 which do not provide for a commercial operator's certificate and, instead. provide for the issuance of either an "air carrier operating certificate" or an "operating certificate." One commenter states that consideration should be given to better defining "appropriately rated pilot" in § 91.109 and provide a definition. The FAA agrees that the phrase "appropriately rated pilot" should be defined better.

The preamble to Amendment No. 91–36 (32 FR 260; January 11, 1967) states that an "appropriately rated pilot" in § 91.21(b) requires a private pilot certificate with an airplane category rating, a multiengine class rating for a small multiengine land plane. and a type rating for a large airplane or a turbojet-powered airplane (large or small).

Accordingly § 91.109(b)(1) is amended to require that the safety pilot hold at least a private pilot certificate with category and class ratings appropriate to the aircraft being flown.

One commenter urges the FAA to reinsert the current rule regarding visual descent points (VDPs) (current § 91.116). VDPs are not an integral part of the approach procedure. An aircraft that is not equipped to identify a VDP has the same approach minima as a similar aircraft that is equipped to identify the VDP.

Notice No. 79–2C proposed that § 91.175(a) read: "Unless otherwise authorized by ATC, when an instrument letdown to a civil airport is necessary, each person operating an aircraft, except a military aircraft of the United States, shall use a standard instrument approach procedure prescribed for the airport in Part 97 of this chapter." The lead-in clause is changed to read. "Unless otherwise authorized by the Administrator," because ATC does not have the authority to approve a person's non-compliance with this rule.

Several commenters raise objections to proposed § 91.203(a)(2), which would prevent an aircraft from operating outside of the United States under the temporary authority of the pink copy of the Aircraft Registration Application as provided in § 17.31(b). The commenters assert that the proposal is a substantive change and not a clarification of the present rule; and that the FAA should consider the economic impact on the industry, the consumers, and the historical precedence of past practices. These commenters suggest that the FAA withdraw the proposal and acknowledge the pink copy of the application as a temporary certificate of registration.

Another commenter is of the opinion that the FAA has not provided discussion, as required by Executive Order 12291, on the economic impacts that would result from the delay between application for an issuance or denial of the registration certificate, under the proposals, in the NPRM. The commenter maintains that future investment purchases and leases would also be adversely affected. Several commenters also question the regulatory consistency that the FAA claims as the basis for the change.

These comments were responded to in full in a Notice of Legal Opinion issued December 1988 (53 FR 50208; December 1, 1988). That Notice of Legal Opinion stated that the limitation of temporary authority to operate an aircraft without registration to domestic operations(as also provided in new § 91.203(a)(2)) reflects current U.S. law and practice. Concerning the economic impact of this ruling, the FAA in that Notice of Legal Opinion answered:

> The aviation community has always been able to transfer ownership and register their aircraft with minimal difficulty. In order to mitigate the potential hardship that could result from grounding an aircraft used in international operations, pending receipt of a registration certificate, the Registry will, upon request, telex a copy of the Certificate of Aircraft Registration to the individual whose name appears on the application as the registered owner of the aircraft. The telex copy is issued after confirmation of the information contained on an Aircraft Registration Application and determination of eligibility for registration. The telex, which reflects critical and verified information resulting from the evaluation by the Registry of an application for aircraft registration, may be used as a temporary Certificate of Aircraft Registration until the original certificate is forwarded for carriage in the aircraft.
>
> This telex certificate will assist owners who submit an application for aircraft registration and who wish to operate the aircraft as soon as possible in international operations. Since the telex, by its terms, is a form of registration certificate, the aircraft may be operated in international air navigation consistent with Article 29 of the Convention [Convention on International Civil Aviation (61 Stat. 1180; T.I.A.S. 1591:15 U.N.T.S. 295)]. The Registry will telex this copy within a matter of days—often within 48 hours—to be kept in the aircraft until the original Certificate of Aircraft Registration (AC Form 8050–3) is forwarded to the registered owner.

Accordingly, the FAA has determined that the rule should be amended as proposed, and consistent with the Chief Counsel's legal opinion, to provide explicitly that operations of aircraft outside the United States for which an application for registration has been submitted but certificate of registration has not been issued are not authorized under the Federal Aviation Regulations.

Several judicial decisions have defined the "shore" as including tidal flats. In some parts of the United States, these tidal flats can extend for several miles and, because of the extreme tides prevalent in these areas, the land may be submerged under as much as 25 to 35 feet of water during periods of high tide. The intent of the rule is to require operators carrying passengers for hire over these areas

been amended accordingly. Also, the word "it," following has been corrected to read "is."

In addition to the specific changes discussed above, minor changes have been made in the wording of the regulations proposed in Notice No. 72–2C. In § 91.3(b), the word "in-flight" has been inserted to clarify that the deviation authority of § 91.3 applies only to in-flight emergencies which affect the safe completion of the flight.

The original intent of § 91.3 was to allow the pilot in command to deviate from certain regulations in the event of an in-flight emergency. Over time, regulations involving non-flight items were inserted into Subparts A and B, while flight-related regulations were inserted in other Subparts. Therefore, the word "in-flight" is being added to return the language to its original intent.

Other changes are nonsubstantive in nature. Except for such minor revisions, those parts of the proposal for which there were no comments are adopted as proposed. Finally, all other sections of Part 91 remain unchanged except for renumbering (see the cross-reference lists below).

Several amendments to Part 91 adopted since Notice No. 79–2C were published are reflected in the final rule. Where reference to other sections of this part were set forth in an amendment, the references have been changed to reflect the appropriate sections as used in the final rule. Those required changes published in the Federal Register prior to June 19, 1989, are discussed below.

Amendment No. 91–188, (50 FR 15380; April 17, 1985) amended current § 91.11, which governs the use of alcohol or drugs by any crewmember performing duty during the operation of an aircraft. This amendment took effect on June 17, 1985. Subsequently, Amendment No. 91–194 (51 FR 1229: January 9, 1986) amended § 91.11(c) to impose a requirement for a crewmember to furnish the results of any test that indicates percentage by weight of alcohol in a crewmember's blood. This amendment took effect on April 9, 1986. Proposed § 91.17 has been revised accordingly.

Amendment No. 91–189 (50 FR 31588; August 5, 1985) removed references to "expect approach clearance time" in § 91.127. This amendment took effect on September 4, 1985. Section 91.185 reflects this amendment.

Amendment No. 91–190 (50 FR 45602; November 1, 1985) added a new paragraph (c) to current § 91.24. This amendment took effect on December 2, 1985. This new paragraph required all aircraft equipped with an operable radar beacon transponder be turned on while airborne in controlled airspace. Subsequently, § 91.24(c) was amended by Amendment No. 91–203 (53 FR 23374; June 21, 1988). Proposed § 91.215(c) has been redesignated as paragraph (d) and the changes brought about by Amendment Nos. 91–190 and 91–203 have been incorporated into revised § 91.215(c).

Amendment No. 91–191 (50 FR 46877; November 13, 1985) amended current § 91.14 (proposed § 91.107) by revising the title and the section to include reference to shoulder harnesses. This amendment took effect on December 12, 1985. Section 91.107 has been revised accordingly. Amendment No. 91–191 also added a new paragraph to current § 91.33 which requires a shoulder harness for specified seats in normal, utility, and acrobatic category airplanes with a seating configuration, excluding pilot seats, of nine or less, manufactured after December 12, 1986. This paragraph appears as § 91.205(b)(15).

Amendment No. 91–192 (50 FR 51189; December 13, 1985) terminated the suspension of Amendment No. 91–157 (44 FR 43714; July 26, 1979) staying the effective date of current § 91.30. This amendment took effect on March 31, 1986. Subsequently, Amendment No. 206 (53 FR 50195; December 13, 1988) amended § 91.30. Section 91.213 reflects these amendments.

Amendment No. 91–193 (50 FR 51193; December 13, 1985) changed the FAA's description of North Atlantic (NAT) Minimum Navigation Performance Specifications (MNPS) airspace to coincide with the International Civil Aviation Organization's (ICAO's) description of the NAT MNPS airspace. This has been reflected accordingly in Section 1 of Appendix C of this final rule.

50 minutes. Proposed § 91.167 has been amended to reflect this change. Current § 91.116 (proposed § 91.175) was amended to establish a separate takeoff minimum for helicopters under IFR, of one-half mile visibility. Current § 91.171 was amended to include helicopters in the altimeter system and altitude reporting equipment tests and inspection requirements. Proposed § 91.411 has been amended to reflect this change. In order to enable rotorcraft to perform Category II operations, Amendment No. 91–196 also amended Appendix A in Part 91 by removing the word "airplane" and replacing it with the word "aircraft" wherever it appears.

Amendment No. 91–197 (52 FR 1836; January 15, 1987) revises the authority citation for Part 91 and adds a new paragraph to current § 91.213 which states that a commuter category airplane must have a pilot designated as second in command, unless the airplane has a passenger seating configuration, excluding pilot seats, of nine or less seats, and is type certificated for operations with one pilot. This amendment took effect on February 17, 1987. This rule now appears as § 91.531(aX3).

Amendment No. 91–198, (52 FR 3391; February 3, 1987) amended current § 91.24(a) and (b) on ATC transponder and altitude reporting equipment and use. This amendment took effect on April 6, 1987. Subsequently, Amendment No. 91–203(53 FR 23374; June 21, 1988) amended § 91.24(b) and (c) and Amendment No. 91–210 (54 FR 25682; June 16, 1989) revised § 91.24(a).

Proposed § 91.215 has been revised accordingly. Amendment No. 91–198 also revised paragraph (b)(2)(iii) of current § 91.90 to allow operations conducted prior to December 1, 1987, in Group II TCAs, to be exempt from the new equipment requirements of current § 91.24. Amendment No. 91–203 (53 FR 23374; June 21, 1988) subsequently revised § 91.90, effective July 21, 1988. Amendment No. 91–205 (53 FR 40323; October 14, 1988) further revised § 91.90 in its entirety effective January 12, 1989. Amendment No. 90–209 (54 FR 24883; June 9,1989) amended § 91.90 by delaying the effective date of the section for helicopter operations. The rule, covering all amendments to date, appears in this revision as § 91.131.

Amendment No. 91–199, (52 FR 9636; March 25,1987) amended current § 91.35 by renumbering the paragraphs and adding a new paragraph that requires any operator who has installed approved flight recorders and approved cockpit voice recorders to keep the recorded information for at least 60 days, or longer, if requested by the Administrator or the National Transportation Safety Board. This amendment took effect on May 26, 1987. The amended rule now appears as § 91.609.

Amendment No. 91–200, (52 FR 17277; May 6, 1987) amended current § 91.173 by requiring each registered aircraft owner or operator to keep "preventive maintenance" records as well as maintenance, alteration, and records of the 100-hour annual, progressive, and other required or approved inspections, as appropriate, for each engine, propeller, rotor, and appliance of an aircraft. This amendment took effect on June 5, 1987. This amended rule now appears as § 91.417(a)(1).

Amendment No. 91–201, (52 FR 20028; May 26, 1987) adds the reference to Part 129 to the exception in current § 91.161(b) from the requirements of §§ 91.165, 91.169, 91.171, 91.173, and 91.174 for aircraft maintained in accordance with a continuous maintenance program as provided for in Part 129. The amendment took effect on August 25,1987. This amended rule now appears as § 91.401(b).

Amendment No. 91–202, (52 FR 34102; September 9, 1987 and 52 FR 35234; September 18, 1987) amended current § 91.27 on civil aircraft certification requirements by adding a new paragraph (c) to require that a copy of the form which authorized the alteration of an aircraft with fuel tanks within the passenger or a baggage compartment be kept on board the modified aircraft. This new rule now appears as § 91.203(c). Current § 91.173 on maintenance records was revised by requiring that such records be made available to the Administrator or an authorized representative of the National Transportation Safety Board and when such a fuel tank is installed as set forth in § 91.35 as amended pursuant to Part 43, a copy of the FAA Form 337 be kept on board the modified aircraft. This new rule appears as § 91.417(b) and (c). This amendment took effect on December 8, 1987.

Amendment No. 91–203, (53 FR 23374; June 21, 1988, 53 FR 25050; July 1, 1988, and 53 FR 26592; July 14,1988) amended or revised § 91.24 (ATC transponder and altitude reporting equipment

and cockpit voice recorders to require digital flight recorders and voice recorders to be installed in selected aircraft operated in general aviation. The specifications for such recorders are set forth in a new Appendix E to Part 91 for airplanes and in a new Appendix F to Part 91 for helicopters. The amendment is reflected as § 91.609(b), (c), (d), and (e), and new Appendixes E and F to Part 91. This amendment becomes effective on October 11, 1991.

Amendment No. 91–205 (53 FR 40323; October 14, 1988) revised the classification and pilot and equipment requirements for conducting operations in terminal control areas (TCA's) by amending § 91.90 to establish a single-class TCA; require the pilot-in-command of a civil aircraft to hold at least a private pilot certificate, except for a student pilot who has received certain documented training; and, to eliminate the helicopter exception from the minimum equipment requirement. The amendment was effective on January 12, 1989. Subsequently, Amendment No. 91–209 (54 FR 24883; June 9, 1989) amended § 91.90(c)(1) by delaying the application of the section for helicopter operations for one year. Revised § 91.131 covers these amendments.

Amendment No. 91–206 (53 FR 50195; December 13, 1988) amended § 91.30 to permit rotorcraft, nonturbine-powered airplanes, gliders, and lighter-than-air aircraft, for which an approved Master Minimum Equipment List has not been developed, to be operated with inoperative instruments and equipment not essential for the safe operation of the aircraft. The amendment also permits general aviation operators of small rotorcraft, nonturbine-powered small airplanes, gliders, and lighter-than-air aircraft for which a Master Minimum Equipment List has been developed, the option of operating under the minimum equipment list concept, or under other conditions as set forth in the amendment. Amendment No. 91–206 also amended § 91.165 to require that any inoperative instrument or item of equipment permitted to be inoperative under the new amended § 91.30 to be repaired, replaced, removed, or inspected at the next required inspection for the aircraft. These amendments became effective on December 13, 1988, and appear as §§ 91.213 and 91.405 of this revision to Part 91.

Amendment No. 91–207 (54 FR 265; January 4, 1989) amended §§ 91.1 and 91.61 to extend the controlled airspace and the applicability of certain air traffic rules to coincide with presidential action to extend the territorial sea of the United States for international purposes, from 3 to 12 nautical miles from the U.S. coast. This amendment became effective on December 27, 1988. These amended rules now appear as §§ 91.1 and 91.101.

Amendment No. 91–208 (54 FR 950; January 10, 1989) added a new § 91.26 to require that any traffic alert and collision avoidance system installed in a U.S. registered civil aircraft must be approved by the Administrator, and if installed, must be on and operating during the aircraft's operation. The amendment became effective on February 9, 1989. The amendment appears herein as §§ 91.221.

Amendment No. 91–209 (54 FR 24883; June 9, 1989) delays the effective date of certain navigational equipment requirements of helicopter operations in a Terminal Control Area (TCA) by the amendment of § 91.90(c)(1). The amendment became effective on June 6, 1989. Section 91.131 covers this amendment.

Amendment No. 91–210 (54 FR 25682; June 16, 1989), effective June 16, 1989, amended § 91.24(a) to allow certain aircraft operators to install non-Mode S transponders in aircraft until July 1, 1992, instead of until January 1, 1992, provided that such transponders are manufactured prior to January 1, 1991, instead of prior to January 1, 1990. This amendment appears as § 91.215(a).

References to Part 91 found in other sections of the Federal Aviation Regulations have also been amended to incorporate the revised numbering of Part 91. These miscellaneous amendments are found at the end of the amendments to Part 91.

Furthermore, §§ 91.615 through 91.645 as identified in Notice No. 79–2C (50 FR 11292; March 20, 1985) now appear in this final rule as §§ 91.503 through 91.533.

Regulatory Evaluation

FAA analysis indicates that these amendments will not have a significant impact on the public or any level of government on an annual basis. The final rule includes changes to clarify the existing

and traffic conditions. The aggregate annual cost savings to these operators will not be significant because: 1) the normal cruise speed for most single engine reciprocating-powered aircraft does not exceed 156 knots, and 2) pilots of most multiengine reciprocating-powered aircraft, while operating within an airport traffic area, will not exceed the normal aircraft cruising speed which is not significantly greater than 156 knots in many of these aircraft.

Section 91.135 provides for a 2-day advance oral notification for submitting requests for authorizations to deviate from positive control area and route segment requirements. The old rule required a 4-day advance written notification of the proposed operation to ATC. A request for an authorization to deviate from these requirements is an infrequent occurrence. Consequently, the new rule will have minor benefits in terms of cost savings.

Sections 91.205, 91.509, and 91.511 clarify the definition of ''shore'' as that area of land adjacent to the water which is above the high water mark, thereby excluding tidal flats. From a safety standpoint, a tidal area covered with water is not as safe an emergency landing place as a dry shoreline. The main benefit is improved survivability from accidents in areas where for-hire operators may not be in compliance with the intent of the present rule. There is insufficient information in accident records to be able to estimate how many deaths could have been avoided through the use of life jackets and pyrotechnic signaling devices in these instances.

Costs

Any cost associated with defining ''shore'' in § 91.205 as the high water line is expected to be negligible. The only parties potentially affected are small for-hire operators who do not comply with the obvious intention of the rule as presently worded. The FAA believes these operators are very few (probably less than 20 operators) in number. Such operators are likely to be traversing tidal flats in areas like Alaska. If such operators do not comply with the rule as written now, then the cost of compliance would be a maximum of about $105 per year per aircraft. This assumes a $50 cost for an approved flotation device per seat and a flotation device useful life of 5 years ($10 per passenger seat per year), 10 seats per aircraft for these specific operators, plus $5 per year per aircraft for a pyrotechnic signaling device.

Section 91.409 allows operators of turbine-powered rotorcraft to use alternate inspection programs such as inspections under an FAA-approved continuous airworthiness maintenance program. The operators may now schedule inspections in a manner that allows the highest level of utilization of their rotorcraft.

The FAA estimates that in 1984 there were approximately 3,000 active turbine-powered rotorcraft in non-air taxi use. The FAA assumes that about one-half of the operators of these aircraft would use the new inspection options.

The value of using these options is difficult to estimate. At a minimum, the major effect of this proposed rule would be one additional day per year of rotorcraft utility. The usefulness of this can be set at least at the cost of capital for 1 day. Using an average aircraft value of $300,000 and a use of 250 days per year, the cost of capital can be estimated at $180 per day ($300,000 at 15 percent interest divided by 250 days). Thus, the minimum benefit is approximately $0.27 million per year (half: the fleet, 1500 turbine-powered rotorcraft times $180). As the fleet grows, the value of this benefit also increases.

Because of the reorganization and resulting renumbering of provisions, persons who regularly refer to existing Part 91 must familiarize themselves with the new structure. It is also recognized that many non-regulatory materials containing references to present Part 91 sections may have to be modified. To assist in reference to the new provisions, a redesignation table, similar to the cross-reference table published herein, will be included in subsequent editions of the Code of Federal Regulations. The FAA believes that any short-term costs associated with transition to the reorganized Part 91 will be outweighed by the benefits inherent in a more logically organized set of regulations.

of small entities.'' As discussed above, the regulatory evaluation for Part 91 indicates that there are no negative or significant economic impacts associated with the proposed rule.

All but four of the changes to Part 91 are editorial or clarifying changes. Three of the four changes result only in minimal benefits being applied. The other is a change to § 91.205 which, while it is basically clarifying, may involve some minimal cost and benefit. Any economic impact would be minor—approximately $100 per aircraft per year, and would affect only a few small for-hire operators in Alaska who do not comply with the intent of the rule as presently worded. Thus, the change could not be construed to cause ''significant economic impact on a substantial number'' of small entities within the meaning of the RFA. Therefore, this rule will not have a significant economic impact on a substantial number of small entities.

Conclusion

The FAA has determined that this document is not considered major under Executive Order 12291 or significant under Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). It causes only four minor changes, three of which will provide benefits with no additional costs to the aviation public. The fourth will impose negligible costs which are substantially outweighed by the benefits provided. Other amendments provide general benefits by deleting obsolete requirements, relaxing certain operating and flight rule requirements, and updating and clarifying the text. Under the provisions of Executive Order 12291, the amendments in this final rule will not have a major economic effect on consumers; industries; Federal, State, or local government agencies; or geographic regions. There will be no significant effects on competition, employment, investment, productivity, innovations, or the ability of U.S.-based enterprises to compete with foreign-based enterprises in domestic or import markets. It is certified that under the criteria of the Regulatory Flexibility Act this final rule will not have a significant economic impact on a substantial number of small entities. A copy of the full economic evaluation is filed in the public docket and may be obtained by contacting the person listed in the ''FOR FURTHER INFORMATION CONTACT'' paragraph of this document.

CROSS REFERENCE

To identify where present regulations are relocated in the new rule, the following cross-reference lists are provided:

Cross Reference Table

Old Section	*New Section*
91.1	91.1 and 91.703
91.2	91.193
91.3	91.3
91.4	91.5
91.5	91.103
91.6	91.189
91.7	91.105
91.8	91.11
91.9	91.13
91.10	91.13
91.11	91.17
91.12	91.19
91.13	91.15
91.14	91.107
91.15	91.307
91.17	91.309
91.18	91.311
91.19	91.21
91.20	91.705
91.21	91.109
91.22	91.151

91.27	91.205
91.28	91.715
91.29	91.7
91.30	91.213
91.31	91.9
91.32	91.211
91.33	91.205
91.34	91.191
91.35	91.609
91.36	91.217
91.37	91.605
91.38	91.323
91.39	91.313
91.40	91.315
91.41	91.317
91.42	91.319
91.43	91.711
91.45	91.611
91.47	91.607
91.49	91.603
91.50	Deleted
91.51	91.219
91.52	91.207
91.53	Deleted
91.54	91.23
91.55	91.817
91.56	91.815
91.57	91.25
91.58	91.613
91.59	91.321
91.61	91.101
91.63	91.903
91.65	91.111 and 91.123
91.67	91.113
91.69	91.115
91.70	91.117
91.71	91.303
91.73	91.209
91.75	91.123
91.77	91.125
91.79	91.119
91.81	91.121
91.83	91.153 and 91.169
91.84	91.707
91.85	91.127
91.87	91.129
91.88	91.130
91.89	91.127
91.90	91.131
91.91	91.137
91.93	91.305
91.95	91.133
91.97	91.135
91.100	91.139
91.101	91.709
91.102	91.143
91.103	91.713
91.104	91.141
91.105	91.155
91.107	91.157
91.109	91.159
91.115	91.173

91.125	91.183
91.127	91.185
91.129	91.187
91.161	91.401
91.163	91.403
91.165	91.405
91.167	91.407
91.169	91.409
91.170	91.415
91.171	91.411
91.172	91.413
91.173	91.417
91.174	91.419
91.175	91.421
91.181	91.501
91.183	91.503
91.185	91.505
91.187	91.507
91.189	91.509
91.191	91.511
91.193	91.513
91.195	91.515
91.197	91.517
91.199	91.519
91.200	91.521
91.201	91.523
91.203	91.525
91.205	Deleted
91.207	Deleted
91.209	91.527
91.211	91.529
91.213	91.531
91.215	91.533
91.301	91.801
91.302	91.803
91.303	91.805
91.305	91.807
91.306	91.809
91.307	91.811
91.308	91.813
91.309	91.819
91.311	91.821
Appendix A	Appendix A
Appendix B	Appendix B
Appendix C	Appendix C
Appendix D	Appendix D
Appendix E	Appendix E
Appendix F	Appendix F

Cross Reference Table

New Section	*Old Section*
91.1	91.1
91.3	91.3
91.5	91.4
91.7	91.29
91.9	91.31
91.11	91.8
91.13	91.9 and 91.10
91.15	91.13

91.101	91.61
91.103	91.5
91.105	91.7
91.107	91.14
91.109	91.21
91.111	91.65
91.113	91.67
91.115	91.69
91.117	91.70
91.119	91.79
91.121	91.81
91.123	91.75 and 91.65
91.125	91.77
91.127	91.85 and 91.89
91.129	91.87
91.130	91.88
91.131	91.90
91.133	91.95
91.135	91.97
91.137	91.91
91.139	91.100
91.141	91.104
91.143	91.102
91.151	91.22
91.153	91.83
91.155	91.105
91.157	91.107
91.159	91.109
91.167	91.23
91.169	91.83
91.171	91.25
91.173	91.115
91.175	91.116
91.177	91.119
91.179	91.121
91.181	91.123
91.183	91.125
91.185	91.127
91.187	91.129
91.189	91.6
91.191	91.34
91.193	91.2
91.201	New
91.203	91.27
91.205	91.33
91.207	91.52
91.209	91.73
91.211	91.32
91.213	91.30
91.215	91.24
91.217	91.36
91.219	91.51
91.221	91.26
91.301	New
91.303	91.71
91.305	91.93
91.307	91.15
91.309	91.17
91.311	91.18
91.313	91.39
91.315	91.40

91.403	91.163
91.405	91.165
91.407	91.167
91.409	91.169
91.411	91.171
91.413	91.172
91.415	91.170
91.417	91.173
91.419	91.174
91.421	91.175
91.501	91.181
91.503	91.183
91.505	91.185
91.507	91.187
91.509	91.189
91.511	91.191
91.513	91.193
91.515	91.195
91.517	91.197
91.519	91.199
91.521	91.200
91.523	91.201
91.525	91.203
91.527	91.209
91.529	91.211
91.531	91.213
91.533	91.215
91.601	New
91.603	91.49
91.605	91.37
91.607	91.47
91.609	91.35
91.611	91.45
91.613	91.58
91.701	New
91.703	91.1
91.705	91.20
91.707	91.84
91.709	91.101
91.711	91.43
91.713	91.103
91.715	91.28
91.801	91.301
91.803	91.302
91.805	91.303
91.807	91.305
91.809	91.306
91.811	91.307
91.813	91.308
91.815	91.56
91.817	91.55
91.819	91.309
91.821	91.311
91.901	New
91.903	91.63
91.905	New
Appendix A	Appendix A
Appendix B	Appendix B
Appendix C	Appendix C
Appendix D	Appendix D

91.201	91.701
91.301	91.901
91.601	91.905

The Rule

For the reasons set forth above, Part 91 of the Federal Aviation Regulations (14 CFR Part 91) is revised and Parts 1, 21, 23, 25, 27, 31, 33, 35, 36, 43, 45, 47, 61, 63, 65, 71, 93, 99, 103, 121, 125, 127, 133, 135, 137, and 141 of the Federal Aviation Regulations (14 CFR Parts 1, 21, 23, 25, 27, 31, 33, 35, 36, 43, 45, 47, 61, 63, 65, 71, 93, 99, 103, 121, 125, 127, 133, 135, 137, and 141) are amended effective August 18, 1990.

The authority citation for Part 103 continues to read as follows:

Authority: 49 U.S.C. 1348, 1354(a), 1421(a), 1422, and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97–449, January 12, 1983).

Preamble to Amendment 103–4

Airspace Reclassification

Adopted: November 14, 1991 **Effective: September 16, 1993**

(Published in 56 FR 65638, December 17, 1991)

SUMMARY: This final rule amends the Federal Aviation Regulations (FAR) to adopt certain recommendations of the National Airspace Review (NAR) concerning changes to regulations and procedures in regard to airspace classifications. These changes are intended to: (1) simplify airspace designations; (2) achieve international commonality of airspace designations; (3) increase standardization of equipment requirements for operations in various classifications of airspace; (4) describe appropriate pilot certificate requirements, visual flight rules (VFR) visibility and distance from cloud rules, and air traffic services offered in each class of airspace; and (5) satisfy the responsibilities of the United States as a member of the International Civil Aviation Organization (ICAO). The final rule also amends the requirement for minimum distance from clouds in certain airspace areas and the requirements for communications with air traffic control (ATC) in certain airspace areas; eliminates airport radar service areas (ARSAs), control zones, and terminal control areas (TCAs) as airspace classifications; and eliminates the term "airport traffic area." The FAA believes simplified airspace classifications will reduce existing airspace complexity and thereby enhance safety.

EFFECTIVE DATES: These regulations become effective September 16, 1993, except that §§ 11.61(c), 91.215(b) introductory text, 91.215(d), 71.601, 71.603, 71.605, 71.607, and 71.609 and Part 75 become effective December 12, 1991, and except that amendatory instruction number 20, § 71.1, is effective as of December 17, 1991 through September 15, 1993, and that §§ 71.11 and 71.19 become effective October 15, 1992. The incorporation by reference of FAA Order 7400.7 in § 71.1 (amendatory instruction number 20) is approved by the Director of the Federal Register as of December 17, 1991 through September 15, 1993. The incorporation by reference of FAA Order 7400.9 in § 71.1 (amendatory instruction number 24) is approved by the Director of the Federal Register as of September 16, 1993 through September 15, 1994.

FOR FURTHER INFORMATION CONTACT: Mr. William M. Mosley, Air Traffic Rules Branch, ATP–230, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, telephone (202) 267-9251.

mental Aircraft Association (EAA), Helicopter Association International (HAI), National Association of State Aviation Officials (NASAO), National Business Aircraft Association (NBAA), and Regional Airline Association (RAA).

The main objectives of the NAR were to:

(1) Develop and incorporate a more efficient relationship between traffic flows, airspace allocation, and system capacity in the ATC system. This relationship will involve the use of improved air traffic flow management to maximize system capacity and to improve airspace management.

(2) Review and eliminate, wherever practicable, governmental restraints to system efficiency thereby reducing complexity and simplifying the ATC system.

(3) Revalidate ATC services within the National Airspace System (NAS) with respect to state-of-the-art and future technological improvements.

In furtherance of the foregoing objectives, several NAR task groups were organized and assigned to review various issues associated with airspace classifications and ATC procedures, pilot certification requirements, and aircraft equipment and operating requirements in the different categories of airspace areas. The recommendations formed the basis of three separate advance notices of proposed rulemaking (ANPRM): Notice No. 85–4, Terminal Airspace Reclassification (50 FR 5055; February 2, 1985); Notice No. 85–5, Airspace Reclassification/Services/Requirements (50 FR 5046; February 2, 1985); and Notice No. 85–15, Controlled Airspace Designations in International Airspace (50 FR 30798; July 7, 1985).

On March 12, 1990, ICAO through its Air Navigation Commission (ANC) formally adopted the airspace classification concept in Amendment No. 33 to Annex 11. The airspace classifications adopted by ICAO, along with the nearest equivalent U.S. airspace designations, are summarized as follows:

Class A Airspace (U.S. Positive Control Areas). All operations must be conducted under instrument flight rules (IFR) and are subject to ATC clearances and instructions. ATC separation is provided to all aircraft.

Class B Airspace (U.S. Terminal Control Areas). Operations may be conducted under IFR, special visual flight rules (SVFR), or VFR. However, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to all aircraft.

Class C Airspace (U.S. Airport Radar Service Areas). Operations may be conducted under IFR, SVFR, or VFR; however, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to all aircraft operating under IFR or SVFR and, as necessary, to any aircraft operating under VFR when any aircraft operating under IFR is involved. All VFR operations will be provided with safety alerts and, upon request, conflict resolution instructions.

Class D Airspace (U.S. Control Zones for Airports with Operating Control Towers and Airport Traffic Areas that are not associated with a TCA or an ARSA). Operations may be conducted under IFR, SVFR, or VFR; however, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to aircraft operating under IFR or SVFR only. All traffic will receive safety alerts and, on pilot request, conflict resolution instructions.

Class E Airspace (U.S. General Controlled Airspace). Operations may be conducted under IFR, SVFR, or VFR. ATC separation is provided only to aircraft operating under IFR and SVFR within a surface area. As far as practical, ATC may provide safety alerts to aircraft operating under VFR.

Class F Airspace (U.S. Has No Equivalent). Operations may be conducted under IFR or VFR. ATC separation will be provided, so far as practical, to aircraft operating under IFR.

Class G Airspace (U.S. Uncontrolled Airspace). Operations may be conducted under IFR or VFR. ATC separation is not provided.

"Special VFR conditions" and "Special VFR operations."

The amendments to Part 71 establish a new Subpart M—Jet Routes and Area High Routes that includes the existing rules in Part 75 as of *December 17, 1991*; revise §§ 71.11 and 71.19 as of October 15, 1992; and revise all of Part 71 to reclassify U.S. airspace in accordance with the ICAO designations as of September 16, 1993. (Further information on the amendments to Part 71 appears in this discussion under *Revisions to Part 71.*) Under this amendment the positive control areas (PCAs), jet routes, and area high routes are reclassified as Class A airspace areas; TCAs are reclassified as Class B airspace areas; ARSAs are reclassified as Class C airspace areas; control zones for airports with operating control towers and airport traffic areas that are not associated with the primary airport of a TCA or an ARSA are reclassified as Class D airspace areas; all Federal airways, the Continental Control Area, control areas associated with jet routes outside the Continental Control Area, additional control areas, control area extensions, control zones for airports without operating control towers, transition areas, and area low routes are reclassified as Class E airspace areas; and airspace which is not otherwise designated as the Continental Control Area, a control area, a control zone, a terminal control area, an airport radar service area, a transition area, or special use airspace is reclassified as Class G airspace. Because airport traffic areas are not classified as airspace areas, this amendment establishes controlled airspace for airports with operating control towers, but without control zones.

Part 75 is removed and reserved. The existing information is transferred to new Subpart M of existing Part 71.

Amendments to Part 91 change terminology to integrate the adopted airspace classifications into corresponding Part 91 operating rules. In addition, the distance from cloud requirements in Class B airspace areas for VFR operations are amended to require a pilot to remain clear of clouds instead of the current requirements of 500 feet below, 1,000 feet above, and 2,000 feet horizontal from clouds in TCAs.

Section 91.215 is amended by relaxing current restraints on ATC in authorizing deviations to operators of aircraft that are not equipped with transponders. The amendment clarifies that the ATC facility having jurisdiction over the airspace concerned is permitted to authorize deviations from the transponder requirements in § 91.215(b) and that a request for a deviation due to an inoperative transponder or an operating transponder without operating automatic pressure altitude reporting equipment having Mode C capability may be made at any time. To provide maximum flexibility to ATC and aircraft operators, this amendment has an effective date of December 12, 1991.

Amendments to Parts 11, 45, 61, 65, 93, 101, 103, 105, 121, 127, 135, 137, 139, and 171 change the terminology to integrate the adopted airspace classifications into respective regulations that refer to those airspace assignments and operating rules. In addition, § 11.61(c) is amended to meet an administrative change within the FAA for titles of persons under the term "Director."

The final rule includes modifications to the proposed rules based on amendments to the FAR that have become effective since the publication of NPRM No. 89–28. The section numbers to Part 91 are changed to match the section numbers designated by Amendment No. 91–211, Revision of General Operating and Flight Rules (54 FR 34292; August 19, 1989). Sections 91.129 and 91.130 are modified to include revisions to § 91.130 by Amendment No. 91–215, Airport Radar Service Area (ARSA) Communication Requirement (55 FR 17736; April 26, 1990). Section 91.131(c) is modified to include revisions from Amendment No. 91–216, Navigational Equipment Requirement in a Terminal Control Area (TCA) and Visual Flight Rules (VFR) Operations (55 FR 24822; June 18, 1990). Section 91.117(a) is modified to include revision by Amendment No. 91–219, Revision to General Operating and Flight Rules (55 FR 34707; August 24, 1990).

Section 91.155(b)(1) is modified to include a revision by Amendment No. 91–224, Inapplicability of Basic VFR Weather Minimums for Helicopter Operations (56 FR 48088; September 23, 1991). Section 91.155(c) was revised by Amendment No. 91-213, Night-Visual Flight Rules Visibility and Distance from Cloud Minimums (55 FR 10610; March 22, 1990) and was corrected on July 19, 1990 (55 FR 29552) and November 13, 1990 (55 FR 47309).

Requirement (55 FR 50502). These SFARs are revised by replacing references to such terms as "terminal control area" with "Class B airspace area" to integrate the appropriate airspace classification.

Obsolete clauses in the existing rule are deleted and typographical errors in the proposal are corrected. The final rule also revises affected paragraphs of the existing rule requiring modification as a result of the rulemaking action but not included in NPRM No. 89–28. The modifications to these paragraphs replace such terms as "terminal control area" and "control zone" with language to integrate the appropriate airspace classification.

Under airspace reclassification, the Sabre U.S. Army Heliport (Tennessee) Airport Traffic Area will become a Class D airspace area; the Jacksonville, Florida, Navy Airport Traffic Area will become three separate but adjoining Class D airspace areas; and the El Toro, California, Special Air Traffic Rules will become part of the El Toro Class C airspace area. Currently, these airports operate under special air traffic rules in Subparts N, O, and R of Part 93. To achieve a goal of airspace reclassification, which is to simplify airspace, the existing rules for these airspace areas are to be deleted as of September 16, 1993. Therefore, this amendment removes and reserves Subparts N, O, and R of Part 93 as of September 16, 1993.

Revisions to Part 71

Part 71 is revised in three stages.

The first revision creates a new Subpart M—Jet Routes and Area High Routes, comprising §§ 71.601, 71.603, 71.605, 71.607, and 71.609. Under this amendment, the existing information in Part 75 is transferred to new Subpart M of Part 71. Since this amendment does not change any operating rules, it is effective December 12, 1991. Section 75.17, Bearings; radials; miles, is not transferred to new Subpart M, because the same information is located in existing § 71.19. NPRM No. 89–28 proposed to amend existing § 75.13. The proposed language is adopted in new § 71.605. A chart comparing old Part 75 and new Part 71, Subpart M follows.

Part 75—Establishment of Jet Routes & Area High Routes		Part 71, Subpart M—Jet Routes & Area High Routes	
§ 75.1	Applicability.	§ 71.601	Applicability.
§ 75.11	Jet routes.	§ 71.603	Jet routes.
§ 75.13	Area routes above 18,000 feet MSL.	§ 71.605	Area routes above 18,000 feet MSL.
§ 75.100	Jet routes.	§ 71.607	Jet route descriptions.
§ 75.400	Area high routes.	§ 71.609	Area high route descriptions.

Sections 71.607, Jet route descriptions, and 71.609, Area high route descriptions are not set forth in the full text of this final rule. The complete listing for all jet routes and area high routes can be found in FAA Order 7400.7, *Compilation of Regulations*, which was last published as of April 30, 1991, and effective November 1, 1991. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of this order may be obtained from the Document Inspection Facility, APA–220, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, (202) 267-3484. Copies may be inspected in Docket Number 24456 at the Federal Aviation Administration, Office of the Chief Counsel, AGC–10, Room 915G, 800 Independence Avenue, SW., Washington, D.C. 20591 weekdays between 8:30 a.m. and 5 p.m. or at the Office of the Federal Register, 1100 L Street, N.W., Room 8401, Washington, D.C. The Part 75 sections referenced in FAA Order 7400.7 will be redesignated as Part 71 sections in the next revision to FAA Order 7400.7.

This amendment, which is effective September 16, 1993, transfers the current sections of existing Part 71, including Subpart M—Jet Routes and Area High Routes, to this new Part 71. The following table lists the sections of existing Part 71, including Subpart M and the corresponding sections in the new Part 71, that are effective September 16, 1993. Subparts B through K and §§ 71.501(b), 71.607, and 71.609, which list airspace descriptions, are not set forth in the full text of this final rule. The complete listing for these airspace designations can be found in FAA Order 7400.9, *Airspace Reclassification,* which is effective September 16, 1993. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of this order may be obtained from the Document Inspection Facility, APA-220, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, (202) 267-3484. Copies may be inspected in Docket Number 24456 at the Federal Aviation Administration, Office of the Chief Counsel, AGC–10, Room 915G, 800 Independence Avenue, SW., Washington, D.C. 20591 weekdays between 8:30 a.m. and 5 p.m. or at the Office of the Federal Register, 1100 L Street, N.W., Room 8401, Washington, D.C.

Existing Part 71		Revised Part 71 that is effective September 16, 1993, and FAA Order 7400.9	
Subpart A—General		*Subpart A—General; Class A airspace*	
§ 71.1	Applicability.	§ 71.1	Airspace classification.
§ 71.3	Classification of Federal airways.	§ 71.73	Classification of Federal airways.
§ 71.5	Extent of Federal airways.	§ 71.75	Extent of Federal airways.
§ 71.6	Extent of area low routes.	§ 71.77	Extent of area low routes.
§ 71.7	Control areas.		Not applicable.
§ 71.9	Continental control area.	§ 71.71	Class E airspace.
§ 71.11	Control zones.		Not applicable.
§ 71.12	Terminal control areas.	§ 71.41	Class B airspace.
§ 71.13	Transition areas.	§ 71.71	Class E airspace.
§ 71.14	Airport radar service areas.	§ 71.51	Class C airspace.
§ 71.15	Positive control areas.	§ 71.31	Class A airspace.
§ 71.17	Reporting points.	§ 71.5	Reporting Points.
§ 71.19	Bearings; Radials; Miles.	§ 71.7	Bearings, radials, mileages.
Subpart B—Colored Federal Airways		*Subpart E—Class E Airspace*	
§ 71.101	Designation.	Subpart E of FAA Order 7400.9.	
§ 71.103	Green Federal airways.	Subpart E of FAA Order 7400.9.	
§ 71.105	Amber Federal airways.	Subpart E of FAA Order 7400.9.	
§ 71.107	Red Federal airways.	Subpart E of FAA Order 7400.9.	
§ 71.109	Blue Federal airways.	Subpart E of FAA Order 7400.9.	
Subpart C—VOR Federal Airways		*Subpart E—Class E Airspace*	
§ 71.121	Designation.	§ 71.79	Designation of VOR Federal airways.

§ 71.151	Restricted areas included.	Subpart E of FAA Order 7400.9.
	Subpart E—Control Areas and Control Area Extensions	***Subpart E—Class E Airspace***
§ 71.161	Designation of control areas associated with jet routes outside the continental control area.	§ 71.71 Class E airspace and Subpart E of FAA Order 7400.9.
§ 71.163	Designation of additional control areas.	§ 71.71 Class E airspace and Subpart E of FAA Order 7400.9.
§ 71.165	Designation of control areas extensions.	Subpart E of FAA Order 7400.9.
	Subpart F—Control Zones	***Subpart D—Class D Airspace***
		Subpart E—Class E Airspace
§ 71.171	Designation.	Subpart D of FAA Order 7400.9. Subpart E of FAA Order 7400.9.
	Subpart G—Transition Areas	***Subpart E—Class E Airspace***
§ 71.181	Designation.	Subpart E of FAA Order 7400.9.
	Subpart H—Positive Control Areas	***Subpart A—General; Class A Airspace***
§ 71.193	Designation.	§ 71.33 Class A airspace areas.
	Subpart I—Reporting Points	***Subpart H—Reporting Points***
§ 71.201	Designation.	§ 71.901 Applicability.
§ 71.203	Domestic low altitude reporting points.	Subpart H of FAA Order 7400.9.
§ 71.207	Domestic high altitude reporting points.	Subpart H of FAA Order 7400.9.
§ 71.209	Other domestic reporting points.	Subpart H of FAA Order 7400.9.
§ 71.211	Alaskan low altitude reporting points.	Subpart H of FAA Order 7400.9.
§ 71.213	Alaskan high altitude reporting points.	Subpart H of FAA Order 7400.9.
§ 71.215	Hawaiian reporting points.	Subpart H of FAA Order 7400.9.
	Subpart J—Area Low Routes	***Subpart E—Class E Airspace***
§ 71.301	Designation.	Subpart E of FAA Order 7400.9.
	Subpart K—Terminal Control Areas	***Subpart B—Class B Airspace***
§ 71.401(a)	Designation.	Subpart B of FAA Order 7400.9.

§ 71.601	Applicability.	Not applicable.
§ 71.603	Jet routes.	Subpart A of FAA Order 7400.9.
§ 71.605	Area routes above 18,000 feet MSL.	Subpart A of FAA Order 7400.9.
§ 71.607	Jet route descriptions.	Subpart A of FAA Order 7400.9.
§ 71.609	Area high route descriptions.	Subpart A of FAA Order 7400.9.

Discussion of Comments

A total of 205 commenters submitted comments to Docket No. 24456 on NPRM No. 89–28. The FAA considered these comments in the adoption of this rule and changes to the proposals were made accordingly. Some comments did not specifically apply to any particular proposal addressed in NPRM No. 89–28. These comments related to the requirements for a transponder with Mode C capabilities, the FAA's anti-drug program, and the proposed TCA for the Washington-Baltimore metropolitan area.

Comments submitted on NPRM No. 89–28 reflect the views of a broad spectrum of the aviation public. The commenters included individuals as well as organizations representing commercial and general aviation pilots. Organizations that commented on NPRM No. 89-28 include: AOPA, ALPA, Air Traffic Control Association (ATCA), ATA, Alaska Airmen's Association, Arizona Pilots Association, Canadian Owners and Pilots Association (COPA), EAA, Ohio Department of Transportation, and Soaring Society of America (SSA).

The following is a discussion of issues addressed in the comments in accordance with the reclassification effort and each classification of airspace. A general division entitled, *Additional Comments*, addresses issues that do not affect a specific airspace classification. Each discussion includes a description of the final amendment and an explanation of the FAA's views.

Reclassification of Airspace

One hundred and forty-one comments on the proposal to reclassify U.S. airspace to meet ICAO standards were submitted. Sixty-eight supported reclassification and 69 opposed reclassification. Four commenters neither supported nor opposed the reclassification effort, but offered observations.

The 68 supporting comments include those submitted by the ATA, ATCA, and COPA. The COPA stated that on an average, approximately 60,000 general aviation aircraft cross the U.S./Canadian border each year. Some commenters stated that the proposed classifications are easier to understand than the current classifications and noted that the proposed classifications would help develop standardization. Two flight instructors commented that the proposed classifications would aid in the teaching of the airspace system to new pilots.

The 69 opposing comments include the Arizona Pilots Association, EAA, and SSA. Several comments, including EAA's, asserted that the current airspace designation names are more descriptive, and hence, easier to remember. Several comments, including one from the Arizona Pilots Association, stated that the proposal would cause confusion, while other commenters alleged that the proposal would only benefit pilots who operate internationally.

Both the SSA and the Arizona Pilots Association recommend that existing airspace nomenclature be retained and a table be included in the *Airman's Information Manual* (AIM) or Part 91 to correlate U.S. airspace designations and ICAO equivalents.

The four comments submitted that do not directly support or oppose the proposal include those from the Alaska Airmen's Association, ALPA, and AOPA. The AOPA expressed concerns about how pilots would be reeducated during the transition phase that would precede the adoption of the proposed airspace reclassification. AOPA recommended that the FAA take five steps to ensure proper pilot education:

As proposed, the FAA will reclassify U.S. airspace in accordance with ICAO standards. Airspace areas, with the exception of special use airspace (SUA) designations, will be classified by a single alphabet character. The FAA believes that reclassification of U.S. airspace simplifies the airspace system, achieves international commonality, enhances aviation safety, and satisfies the responsibility of the United States as a member of ICAO.

Some commenters misunderstood the proposal on airspace reclassification. These commenters understood Class A airspace areas to be en route airspace and Class B, Class C, and Class D airspace areas to be terminal airspace. The recommended ICAO airspace classes are not based on whether the airspace area is designated for ''en route'' or ''terminal'' operations, but rather on other factors that include type of operation (i.e., IFR, VFR) and ATC services provided. (The table below lists the new airspace classifications, its equivalent in the existing airspace classification, and its features, which would apply to terminal and en route airspace areas.) For example, under this rule Class C airspace is designated in terminal areas. Class C airspace in another country could be designated in en route areas. However, the type of operation, ATC services provided, minimum pilot qualifications, two-way radio requirements, and VFR minimum visibility and distance from cloud requirements in that country's Class C airspace will be similar to the Class C airspace areas designated in the United States. As adopted by the FAA, Class A airspace areas are designated in positive control en route areas; Class B, Class C, and Class D airspace areas are designated in terminal areas; and Class E airspace areas are designated in both en route (low altitude) and terminal areas. However, the rules are written in a manner that the classes of airspace will not be limited to terminal or en route airspace areas. For example, if a regulation only applies to operations in a terminal environment, the rule specifies that the airspace is ''designated for an airport.''

Operations Permitted	IFR	IFR and VRF	IFR and VFR	IFR and VFR	IFR and VFR	IFR and VFR
Entry Prerequisites	ATC clearance	ATC clearance	ATC clearance for IFR Radio contact for all	ATC clearance for IFR Radio contact for all	ATC clearance for IFR Radio contact for all IFR	None
Minimum Pilot Qualifications	Instrument rating	Private or student certificate	Student certificate	Student certificate	Student certificate	Student certificate
Two-way radio communications	Yes	Yes	Yes	Yes	Yes for IFR operations	No
VFR Minimum Visibility	Not applicable	3 statute miles	3 statute miles	3 statute miles	*3 statute miles	**1 statute mile
VFR Minimum Distance from Clouds	Not applicable	Clear of clouds	500 feet below, 1,000 feet above, and 2,000 feet horizontal	500 feet below, 1,000 feet above, and 2,000 feet horizontal	*500 feet below, 1,000 feet above, and 2,000 feet horizontal	**500 feet below, 1,000 feet above, and 2,000 feet horizontal
Aircraft Separation	All	All	IFR, SVFR, and runway operations	IFR, SVFR and runway operations	IFR, SVFR	None
Conflict Resolution	Not applicable	Not applicable	Between IFR and VFR operations	No	No	No
Traffic Advisories	Not applicable	Not applicable	Yes	Workload permitting	Workload permitting	Workload permitting
Safety Advisories	Yes	Yes	Yes	Yes	Yes	Yes

*Different visibility minimum and distance from cloud requirements exist for operations above 10,000 feet MSL.

**Different visibility minima and distance from cloud requirements exist for night operations, operations above 10,000 feet MSL, and operations below 1,200 feet AGL.

Offshore Airspace

The FAA adopts, as proposed, the NAR recommendations NAR 3–2.1.1—Offshore Airspace Nomenclature, NAR 3–2.1.2—Offshore Control Area Uniform Base, NAR 3–2.1.3—Offshore Control Area Identification, and NAR 3–2.1.4—Offshore Airspace Classification, which consider offshore airspace areas. However, NAR 3–2.1.2, which recommends a uniform base for offshore control areas of 1,200 feet above the surface unless otherwise designated, and NAR 3-2.1.3, which recommends that offshore control areas be identified with a name as opposed to a number are contingent on the FAA's further review. (More details on the review process appear later in this document under the title *Implementation of Airspace Reclassification.*) Any changes to offshore airspace areas resulting from the FAA's review will be accomplished by separate rulemaking actions. The FAA's review is being conducted in compliance with Executive Order 10854, which requires FAA consultation with both the Departments of State and Defense before designating controlled international airspace. The FAA expects that most offshore airspace areas will be classified as Class E or Class A airspace areas.

Education of the Aviation Community

The FAA agrees with the comments that the aviation public needs to be educated in airspace reclassification. To ensure that the aviation community can become knowledgeable about the new airspace classifications and that aeronautical charts can be updated, the new airspace classification will not become effective until September 16, 1993.

Tentative Date	*Event*
October 15, 1992	First sectional aeronautical charts (SAC), world aeronautical charts (WAC), and terminal aeronautical charts (TAC) are published with legends that indicate both existing and future airspace classifications.
March 4, 1993	Initial charting changes are completed for the SAC and TAC.
June 24, 1993	North Pacific, Gulf of Mexico, and Caribbean planning charts are published with legends that indicate both existing and future airspace classifications.
August 19, 1993	Flight Case Planning and North Atlantic Route charts are published with legends that indicate existing and future airspace classifications.
September 16, 1993	New airspace classifications become effective. All charts begin publication with legends that indicate both the new airspace classification and the former airspace classification. All related publications are updated.
March 3, 1994	First charts are published with legends that only indicate the new airspace classifications.
August 17, 1994	All charts are published with legends that only indicate the new airspace classifications.

Coordination with a task group of the IACC and the NOS will continue throughout the transition. An anticipated modification to the symbols on aeronautical charts is the addition of a segmented magenta line to represent the controlled airspace area for airports without operating control towers that extends upward from the surface (Class E airspace). A segmented blue line (which currently depicts a control zone) will denote a Class D airspace area, the controlled airspace for airports with operating control towers that are not the primary airport of a TCA or an ARSA.

The legends in aeronautical charts will include both the existing airspace classifications and the airspace classifications to be effective September 16, 1993. For example, the solid blue line that symbolizes a TCA will be followed by "TCA (Class B)." The first charts with a dual legend will be published October 15, 1992. Commencing September 16, 1993, the legends on these charts will be reversed [e.g., a solid blue line will be followed by "Class B (TCA)"]. Between March 3 and August 17, 1994, the use of dual indication legends will be phased out.

Between October 1992 and March 1993, educational materials such as pocket guides, a video, and posters will be issued to instruct the aviation public on airspace reclassification. The FAA will begin to update the AIM and other publications, as well as FAA orders, manuals, handbooks, and advisory circulars that must be revised to include the new airspace classifications and an explanation of the transition and implementation procedures.

The transition and implementation of the Airspace Reclassification final rule also will include parallel reviews of certain current airspace designations to meet the new airspace classifications. A full discussion on this review appears later in this document under the title *Implementation of Airspace Reclassification.*

Class A Airspace

NPRM No. 89–28 proposed to reclassify the PCAs as Class A airspace areas with no other alterations to this airspace. Four commenters, including AOPA, neither supported nor opposed this classification; however, they offered comments and modifications. Some commenters stated that if the FAA adopts the Class A designation for the PCAs, Class A airspace areas should remain en route airspace and should not be lower than 18,000 feet mean sea level (MSL).

As proposed, the FAA will reclassify the PCAs as Class A airspace areas. In addition, jet routes and area high routes will be reclassified as Class A airspace areas. These airspace areas, which consist of direct courses for navigating aircraft at altitudes between 18,000 feet MSL and flight level 450, inclusive, meet the criteria of Class A airspace as adopted by ICAO.

distance requirements of 500 feet below, 1,000 feet above, and 2,000 feet horizontal from clouds will be amended to require that the pilot must remain clear of clouds.

One comment supports and two comments specifically oppose the proposed reclassification. Twelve comments on the proposal to amend minimum distance from clouds for VFR operations in Class B airspace areas were received. Eight of these comments support and four oppose the proposal.

The comments submitted in support of the proposal to reclassify TCAs as Class B airspace areas and to modify the minimum distances from cloud for VFR operations include those from AOPA, the Alaska Airmen's Association, EAA, and SSA. AOPA stated that the proposal "is a positive step in improvement of VFR traffic flow within" Class B airspace areas.

A commenter in support of reclassification stated that some of the areas to be classified as Class B airspace areas could be redesignated as Class C airspace areas.

The four comments submitted in opposition to the proposed amendment on distance from cloud requirements for VFR operations include a comment from ALPA. Some commenters stated that the proposal to modify the minimum distance from clouds for VFR flight in Class B airspace areas reduces the existing margin of safety. ALPA further stated that the ability of a pilot to maintain visual contact with other aircraft is reduced if aircraft operate in close proximity to clouds. One commenter stated that the proposals do not answer the need for clear radio failure procedures in Class B airspace areas. Another commenter stated that Class B airspace areas are actually divided into two types of Class B airspace: one in which a private pilot certificate is required and one in which, at a minimum, only a student pilot certificate is required.

This rulemaking reclassifies existing airspace areas with the equivalent recommended ICAO airspace area. It does not redesignate existing airspace areas. For example, the redesignation of a Class B airspace area (TCA) to a Class C airspace area (ARSA) is beyond the scope of this rulemaking. The FAA believes that the elimination of terminal areas designated as Class B airspace areas would create a substantial adverse impact on the safe and efficient control of air traffic in those high volume terminal areas. Class B airspace areas, like the TCAs that preceded them, provide more efficient control in terminal areas where there is a large volume of air traffic and where a high percentage of that traffic is large turbine-powered aircraft. Additionally, on July 25, 1991, the FAA revised FAA Order 7110.65, *Air Traffic Control*, by adopting specific separation standards for operations under VFR in existing TCAs. These standards require air traffic controllers to separate aircraft operating under VFR in existing TCAs from other aircraft operating under VFR and IFR.

As stated in NPRM No. 89–28 in response to NAR 1–7.2.9—Recommended VFR Minima, the FAA views the relaxation of the distance from cloud requirements for VFR operations as a modification that would enhance rather than reduce safety. Under the existing regulations, a pilot operating an aircraft under VFR in a TCA (Class B airspace) is provided with ATC services and is subject to ATC clearances and instructions. For the pilot operating under VFR to remain specific distances from clouds, the pilot must alter course or assigned heading/route, which is a disruption to traffic flow and could be a compromise to safety. The amendment will increase safety for pilots operating under VFR and ATC by permitting these pilots to remain clear of clouds in Class B airspace areas, but not requiring them to remain a specific distance from clouds. However, if an ATC instruction to a pilot operating an aircraft under VFR could place that aircraft in a cloud, FAR § 91.3, *Responsibility and authority of the pilot in command,* requires the pilot in command to be responsible for ensuring that the aircraft does not enter a cloud and any such ATC instruction may be refused.

Accordingly, as proposed, the FAA will reclassify TCAs as Class B airspace areas and amend the distance from cloud requirements for VFR operations to clear of clouds.

Even though ATC communication requirements for operations in Class B airspace areas are the same as those that exist in TCAs, the relaxation of the distance from cloud requirements will become effective with the new airspace classifications. This will ensure that all users are familiar with the amendment when it becomes effective.

airports.

Class C Airspace

Three comments were submitted on the reclassification of ARSAs as Class C airspace areas. None of the comments specifically support or oppose the reclassification. All of the comments, including one from EAA, addressed additional modifications.

Two commenters noted that the proposal for VFR operations in Class B airspace areas to remain clear of clouds could be applied to Class C airspace areas.

In its comment, EAA opposed any increase in the size of Class C airspace areas. Other recommendations by commenters included the need for clear radio failure procedures and the need for designated areas that do not require communications with ATC when the pilot desires to use an uncontrolled airport within Class C airspace areas.

As proposed, the FAA will reclassify ARSAs as Class C airspace areas. No other modifications to Class C airspace areas or changes in operating rules were proposed. An ARSA that currently operates on a part-time basis is classified as Class C part-time and Class D or Class E at other times.

Aircraft operating under VFR in Class C airspace areas operate under less stringent requirements than aircraft operating under VFR in Class B airspace areas and are not provided the same separation by ATC. Therefore, the relaxation of the VFR distance from cloud requirements in Class C airspace areas to remain clear of clouds would not be in accordance with safety precautions. As noted earlier, lost communication procedures are addressed in paragraph 470, Two-way Radio Communications Failure, of the AIM. Since Class C airspace areas often have a high number of aircraft that operate under IFR, a relaxation of existing communications requirements would not be in the interest of safety. Any modifications to the dimensions or operating requirements for Class C airspace areas are outside the scope of this rulemaking.

Class D Airspace

NPRM No. 89–28 proposed to reclassify control zones for airports with operating control towers and airport traffic areas, not associated with a TCA or an ARSA, as Class D airspace areas. In addition, NPRM No. 89–28 proposed to: (1) raise the ceiling to up to, and including, 4,000 feet from the surface of the airport; (2) require aircraft in Class D airspace areas to establish two-way radio communications with ATC; and (3) convert the lateral unit of measurement from statute miles to nautical miles.

One hundred and forty comments concerning the proposal to establish the ceiling of the Class D airspace areas at 4,000 feet above the surface were submitted. All of the comments opposed the proposal.

Of the 83 comments regarding the proposal to require pilots who operate in Class D airspace areas to establish two-way radio communications with ATC, two supported the proposal and 80 opposed it. One comment neither supported nor opposed the proposals.

One hundred and forty-three comments related to the proposal to convert the lateral unit of measurement of Class D airspace areas from statute to nautical miles were submitted. Most interpreted the proposal to mean that the lateral size of the airspace areas would change from 5 statute miles to 5 nautical miles. (The FAA's intent in NPRM No. 89–28 is to convert statute miles as a unit of measurement to the equivalent in nautical miles.) Twelve comments supported and 131 comments opposed the proposal. Most of the commenters who specifically opposed the use of nautical miles instead of statute miles were opposed to a 5 nautical mile lateral measurement of Class D airspace areas.

The commenters who support the proposed conversion from statute to nautical miles or the proposed two-way radio communications requirements with ATC submitted suggestions and reasons for support. Some of these comments stated that the standardized use of nautical miles as opposed to statute miles could be expanded to weather reports, visibility requirements, and distance from cloud requirements above 10,000 feet MSL. ATCA stated that the proposal for two-way radio communications with ATC "erases a potentially dangerous practice and is long overdue." Another commenter suggested that a corridor

modification and communications requirements on operations under SFAR No. 51–1—Special Flight Rules in the Vicinity of Los Angeles International Airport. According to the comments, the proposal would raise the ceiling of the airport traffic areas at Santa Monica and Hawthorne Airports into the Special Flight Rules Area. The commenters also stated that the proposed two-way radio communication requirements with ATC may not allow aircraft, especially those with one radio, to listen to an advisory frequency.

Some commenters, including SSA, stated that airport traffic areas (Class D airspace) could be depicted on aeronautical charts. Several commenters, including AOPA, the Alaska Airmen's Association, EAA, and the Ohio Department of Transportation stated that the proposals would increase air traffic controller workload. Some comments, including one from AOPA, stated that the proposal would increase pilot workload or that no safety benefit exists for the proposed modifications.

Several commenters, including AOPA and EAA, requested that the ceiling of Class D airspace areas be lowered to 2,000 feet or 2,500 feet above the surface. The commenters stated that the lower altitudes are adequate for the arrival and departure of aircraft. Other commenters, including the Alaska Airmen's Association and SSA, recommended retaining the current ceiling of 3,000 feet above the surface.

Commenters stated that the proposals for modifying the size of airspace and for requiring two-way radio communications with ATC would be a burden to aircraft that fly at low altitudes, and that some aircraft would need to fly a minimum of 5,500 feet MSL as opposed to 3,500 feet MSL. Some commenters stated that the proposal would burden pilots of airplanes that do not have radios. One commenter noted that pilots who fly older aircraft with no radios or navigational aids do not pose a threat to commercial aviation.

Several comments, including those submitted by the AOPA and the Alaska Airmen's Association, stated that the proposal for two-way radio communications with ATC would not permit aircraft to listen to the common traffic advisory frequency (CTAF) of satellite airports. Additional comments, including those submitted by the AOPA and EAA, noted that air traffic controllers in control towers cannot provide effective traffic advisories for satellite airports. Some commenters, including EAA and the Ohio Department of Transportation, stated that the proposed two-way radio communication requirements with ATC are not necessary because operations at satellite airports usually do not interfere with airports with operating control towers. Another commenter noted that a pilot who desires to use a satellite airport and needs to fly near an airport with an operating control tower would need to notify the local ATC facility.

Commenters, including the Arizona Pilots Association and EAA, recommended that the lateral unit of measurement of Class D airspace areas be designated at 4 nautical miles.

As proposed, control zones for airports with operating control towers and airport traffic areas that are not associated with a TCA or an ARSA are reclassified as Class D airspace areas. After considering public comment and re-examining technical criteria, the FAA has determined that: (1) the ceiling of a Class D airspace area (designated for an airport) will normally be designated at 2,500 feet above the surface of the airport converted to mean sea level (MSL), and rounded to the nearest 100 foot increment; (2) two-way radio communications with ATC will be required; and (3) the lateral dimensions will be expressed in nautical miles rounded up to the nearest tenth of a mile. The actual lateral and vertical dimensions will be determined on an individual basis using revised criteria in FAA Order 7400.2C, *Procedures for Handling Airspace Matters.* (More detail on the review of airspace appears under the title *Implementation of Airspace Reclassification.*)

Airspace at an airport with a part-time control tower is classified as a Class D airspace area when the control tower is in operation, and as a Class E airspace area when the control tower is not in operation.

The amendments do not affect operations under SFAR 51–1. The amendments to SFAR 51-1 replace the term "Terminal Control Area" with "Class B airspace area" and change the references to sections in Part 91 to the sections effective August 18, 1990. Any modifications to operations under an SFAR or Part 93, Special Air Traffic Rules and Airport Traffic Patterns, will be proposed under separate rulemaking actions.

surface. Many of the comments on this proposal were opposed to [illegible] the FAA has determined that the ceiling of Class D airspace areas will normally be designated at up to, and including, 2,500 feet above the surface of the airport expressed in MSL. To further enhance uniformity, the ceiling of Class E airspace areas that extend upward from the surface normally will also have a ceiling established at up to, and including, 2,500 feet above the surface of the airport expressed in MSL. A ceiling of 2,500 feet above the surface will provide adequate vertical airspace to protect traffic patterns. However, the FAA emphasizes that the ceiling of a Class D or a Class E airspace area will reflect the conditions of the particular airspace area. For example, if local conditions warrant, the ceiling could be designated at more than 2,500 feet above the surface (e.g., 2,700 or 3,000 feet above the surface). Conversely, some airports with limited volume of nonturbine-powered aircraft may have a lower vertical limit.

The decision to use 2,500 feet above the surface is based on recent FAA analysis of vertical airspace necessary to protect traffic patterns and a review of public comment to lower the ceiling of an airport traffic area. The FAA's analysis demonstrates that the 2000-foot vertical limit is insufficient since it often does not protect traffic patterns for high performance aircraft.

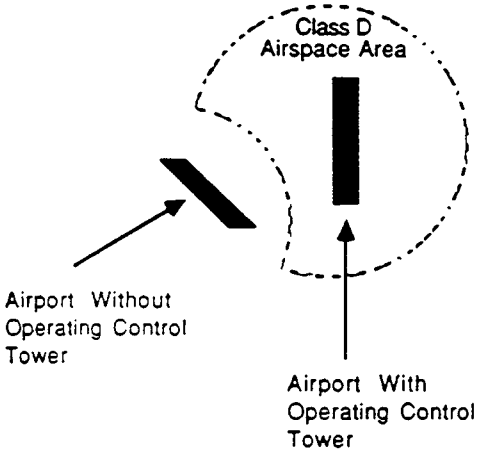
Two-Way Radio Communications in and Lateral Dimensions of Class D Airspace Areas

The FAA has determined that in order to meet safety standards, two-way radio communications with ATC must be established in Class D airspace areas. Task Group 1–2.3, which recommended NAR 1–2.3.2—Two-Way Radio Requirements in Airport Traffic Areas, stated that ''pilots have been issued violations, or critical injuries have occurred because pilots were not in compliance with the two-way radio communications requirements.''

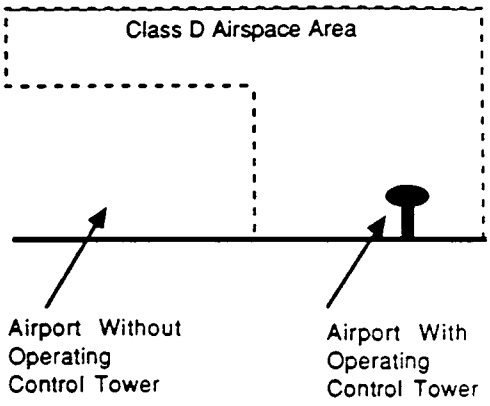
The FAA also has determined that the lateral distance of Class D airspace areas will be based on the instrument procedures for which the controlled airspace is established. Therefore, the dimensions may not be in a circular shape that is similar to the current airport traffic areas or control zones.

Many commenters stated that the communications requirements associated with operations at satellite airports within Class D airspace areas would prevent them from using CTAF procedures. The FAA generally agrees with these comments; consequently, the FAA will individually review control zones and associated transition areas that are not associated with the primary airport of a TCA or an ARSA. The review of the designation of Class D airspace areas will be conducted to determine the necessary size of the area and will exclude satellite airports to the maximum extent practicable and consistent with safety. For example, a satellite airport without an operating control tower might have a Class E airspace area carved out of a Class D airspace area, or a Class E airspace area might be placed under a shelf of a Class D airspace area. (See Figure 1.) In another example, the portions of an existing control zone that extend beyond the existing limits of an airport traffic area (extension used for instrument approaches) may be designated only by using the airspace necessary under the terminal instrument procedures (TERPs) criteria. (See Figure 1.) When a satellite airport is excluded, a pilot who is operating an aircraft in the immediate vicinity of that satellite airport and who does not otherwise penetrate airspace where two-way radio communications with ATC are required will be free to communicate on the CTAF of that satellite airport.

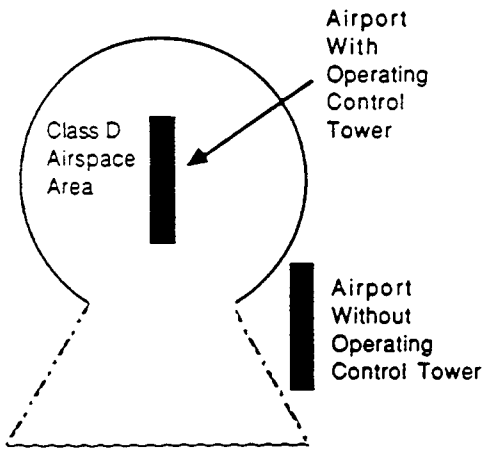
Cutout Method



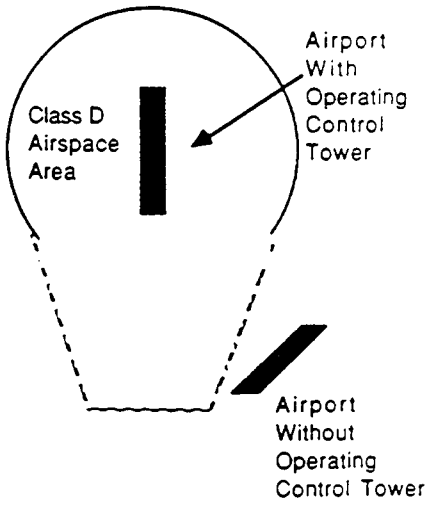
Shelf Method



TERPS' Trapezoid Going Toward the NAVAID



TERPS' Trapezoid Going Away from the NAVAID



the Continental Control Area, control areas associated with jet routes outside the Continental Control Area, additional control areas, control area extensions, control zones for airports without operating control towers, transition areas, and area low routes. The five comments submitted on this proposal neither supported nor opposed the proposal, but offered suggestions.

One commenter noted that the current names are descriptions of how the airspace area is to be used (i.e., transition areas, airways) and that under the proposal, airways would still be necessary. The SSA recommended the continued use of the term ''control zone'' for airspace extending upward from the surface that is independent of Class B, Class C, or Class D airspace areas. They also recommended that control zones should extend to the floor of overlying controlled airspace. One commenter recommended that the floor of Class E airspace areas that are now 1,200 feet above ground level (AGL) be raised to 1,500 or 2,200 feet AGL and noted that the floor of Class E airspace areas should not be below the minimum en route IFR altitude (MEA) in mountainous regions.

The FAA will adopt the classification of Class E airspace areas as proposed. This classification will not eliminate the requirement for Federal airways, which are specified in Part 71. However, this classification will eliminate the designation of control zones. Control zones for airports without operating control towers are classified as Class E airspace areas designated for an airport that extend upward from the surface.

The FAA believes that the reclassification of control zones for airports without operating control towers as Class E airspace areas will not cause confusion. As noted earlier, such airspace areas will be depicted on visual aeronautical charts by a segmented magenta line. Under existing regulations, a control zone usually has a 5-statute mile radius and ascends to the base of the Continental Control Area. The FAA's review process, using the revised criteria in FAA Order 7400.2C, will look at the dimensions of each control zone and associated transition areas. Each review will include a review of instrument approach procedures, as well as local terrain to determine the actual airspace needed to contain IFR operations.

The floor of Class E airspace areas, which do not extend upward from the surface, will remain the same as existing airspace areas (e.g., 700 feet AGL, 1,200 feet AGL, 1,500 feet AGL, 14,500 feet MSL). Any modifications to the floor of Class E airspace areas are beyond the scope of this rulemaking.

Class G Airspace

NPRM No. 89–28 proposed to reclassify airspace that is not otherwise designated as the Continental Control Area, a control area, a control zone, a terminal control area, a transition area, or SUA as Class G airspace areas. Of the six comments submitted, four comments opposed the proposal and two offered suggestions.

The four opposing comments, including EAA's comment, understood the Class G airspace areas to be airspace below 700 feet AGL.

The two comments that neither supported nor opposed the proposal included the comment from the ATA. The ATA recommended that Class G airspace areas be designated as Class F airspace areas.

The FAA has determined that all navigable airspace areas not otherwise designated as Class A, Class B, Class C, Class D, or Class E airspace areas or SUA are classified as Class G airspace areas. Since the proposal to replace the Continental Control Area with the U.S. control area in NPRM No. 88–2 was not adopted, the vertical limit of Class G airspace areas will vary (e.g., 700 feet AGL, 1,200 feet AGL, 1,500 feet AGL, 14,500 feet MSL). In addition, the flight visibility and distance from cloud requirements for operations under VFR proposed in NPRM No. 89–28 are modified to remain consistent with the existing requirements in §§ 91.155 and 103.23.

Class F airspace is omitted from the U.S. airspace classifications because this airspace, as adopted by ICAO, does not have a U.S. equivalent. Class G airspace, as adopted by ICAO, is the equivalent of U.S. uncontrolled airspace.

In NPRM No. 89–28 and in this final rule, the FAA does not suggest that any new airspace designations could be specified without following rulemaking procedures where required. Further review of airspace areas will be proposed in future FAA rulemaking actions.

Three commenters, including the Alaska Airmen's Association and SSA, noted that NPRM No. 89–28 proposed to define controlled airspace in FAR § 1.1 as airspace in which "all aircraft may be subject to ATC" rather than airspace in which "some or all aircraft may be subject to ATC." According to one commenter, because aircraft operating under VFR are not always subject to ATC in controlled airspace, especially Class E airspace, the current definition is more accurate.

The proposed definition of controlled airspace is adopted in essence but it has been modified to correspond with ICAO's definition of a controlled airspace. Subsequent to the publication of NPRM No. 89–28, ICAO modified its definition of controlled airspace to read as follows: "*Controlled airspace.* An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification. Note—Controlled airspace is a generic term which covers ATS [air traffic services] in airspace Classes A, B, C, D, and E." The proposed FAA definition in NPRM No. 89–28 read: "*Controlled airspace* means airspace designated as Class A, Class B, Class C, Class D, or Class E airspace in Part 71 of this chapter and within which all aircraft may be subject to air traffic control."

While the commenter is essentially correct that all aircraft are not always subject to air traffic control, any aircraft may be subject to ATC if the pilot operates under IFR or if the pilot requests and receives air traffic services. The FAA believes that misunderstandings would be minimized with the adoption of the ICAO definition. The ICAO definition and the proposed definition are essentially synonymous; however, the FAA is confident the adoption of the ICAO definition is consistent with the objectives of airspace reclassification and that it is beneficial to have a common international definition of controlled airspace.

Four commenters, including EAA and SSA, noted that NPRM No. 89–28 only permits Special VFR operations for the purposes of departing from or arriving at an airport. The commenters stated that such a restriction of Special VFR operations would affect pipeline patrol, aerial photography, law enforcement, agricultural, and other special types of operations. EAA also stated that the proposed limitation of 4,000 feet above the surface for Special VFR operations could prevent pilots from climbing to the top of a haze layer.

The FAA will continue to permit Special VFR operations for through flights as well as flights for arrival or departure. Because control zones will be eliminated under Airspace Reclassification, Special VFR operations are only permitted within the ceiling and lateral boundaries of the surface areas of the Class B, Class C, Class D, or Class E airspace designated for an airport. Because the proposal for a uniform ceiling for Class C, Class D, and Class E airspace areas at 4,000 feet above the surface is not adopted, the boundaries of the airspace area in which Special VFR operations are permitted will vary. For example, if a Class C airspace area has a ceiling designated at 4,500 feet MSL and a surface area designated within a 5-nautical mile radius from the airport, Special VFR operations are permitted within that 5-nautical mile radius up to and including 4,500 feet MSL.

One commenter, a flight instructor with a petition signed by additional flight instructors, stated that the language in the proposal on aerobatic flight is vague and could be interpreted to restrict aerobatic operations within existing transition areas and other less crowded airspace areas. The commenter was concerned that the proposed § 91.71(c) could affect spin training at flight schools.

Under this amendment, the term "control zone" will be eliminated. However, the FAA desires to continue restrictions that currently exist in the FAR on operations within control zones. These restrictions will now apply within the lateral boundaries of the surface areas of the Class B, Class C, Class D, or Class E airspace designated for an airport. For example, if a Class E airspace area is designated to extend upward from the surface with a 4.4-nautical mile radius from the airport and a ceiling of 2,600 feet MSL, aerobatic flight will not be permitted below 2,600 feet MSL within a 4.4-nautical mile radius of the airport.

transition areas. The changes to Order 7400.2C are considered independent of the Airspace Reclassification final rule, and involve the revised criteria to be used for the reviews. Because the changes to Order 7400.2C and the reviews occur before the effective date of the Airspace Reclassification final rule, the revised criteria are written in existing airspace terminology. Examples of the revised criteria include: (1) converting the lateral unit of measurement from statute miles to nautical miles; (2) conforming existing control zones to be congruent with the lateral dimensions of the surface areas of existing TCAs or ARSAs; (3) redesignating control zones to contain intended operations (not necessarily in a circular configuration); (4) redesignating the vertical limit of control zones from the surface of the earth to a specified altitude (but not to the base of the Continental Control Area); (5) establishing a policy to exclude satellite airports from control zones to the maximum extent practicable, consistent with instrument procedures and safety; and (6) replacing control zone departure extensions with transition areas.

The FAA anticipates that many control zones and associated transition areas would require minor modification. For example, a control zone could be integrated with the associated TCA or ARSA (Class B or Class C airspace area) or a control zone could become either a Class D airspace area or a Class E airspace area that extends upward from the surface.

The reviews will include control zones where a significant change in the current airspace structure is expected. For example, a control zone that extends beyond the perimeter of the associated TCA or ARSA and could require modification of the associated TCA or ARSA (Class B or Class C airspace area). The reviews will also include transition areas not associated with control zones and offshore airspace. Proposed changes that result from these reviews will be promulgated using normal rulemaking procedures.

The reviews could also result in the expansion of controlled airspace. These actions could affect airspace areas associated with non-Federal control towers. Any expansion of controlled airspace will be proposed in future NPRMs.

All necessary changes to the airspace structures are scheduled to be completed by September 16, 1993, the effective date of the Airspace Reclassification final rule.

Changes to the NPRM

This final rule includes several nonsubstantive editorial changes made to NPRM No. 89–28. Changes are also included in this final rule to certain FAR sections that were not included in NPRM No. 89–28 but require changes in terminology to be consistent with the amendments. Three additional subparts in Part 93 are deleted because the rules will not be necessary under airspace reclassification. The sections and subparts, with an explanation of the changes made to them, follow.

SFAR 51–1: The reference to "Terminal Control Area (TCA)" in Section 1 is replaced with "Class B airspace area." The reference to § 91.105(a) in Section 2(a) is replaced with § 91.155(a). The reference to § 91.24(b) in Section 2(b) is replaced with § 91.215(b). The phrase "meet the equipment requirements" in Section 2(b) is replaced with "be equipped as." The reference to § 91.90(a) and § 91.90 in Section 3 is replaced with § 91.131(a) and § 91.131.

SFAR 60: The references to "terminal control area" and "airport radar service area" in Section 3a are replaced with "Class B airspace area" and "Class C airspace area." The phrase "terminal and en route airspace" in Section 3a is replaced with "class of controlled airspace."

SFAR 62: The two references to "terminal control area" in Section 1(a) are replaced with "Class B airspace area." The references to the "Tri-Area TCA" in Section 2(24) and (25) are replaced with "Tri-Area Class B airspace area."

§ 45.22(a)(3)(i): The phrase "the designated airport control zone of the takeoff airport, or within 5 miles of that airport if it has no designated control zone" is replaced with "the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for the takeoff airport, or within 4.4 nautical miles of that airport if it is within Class G airspace."

§ 61.95: All references to "terminal control area" in the title and paragraphs (a), (a)(1), (a)(2), (a)(3), and (b) are replaced with "Class B airspace" or "Class B airspace area."

§ 91.126: This section is established to include the existing requirements in § 91.127 on operations on or in the vicinity of an airport without an operating control tower.

§ 91.905: The references to §§ 91.127, 91.129, 91.130, 91.131, and 91.135 are replaced with the titles to become effective September 16, 1993, and a reference is added to § 91.126.

§ 93.1(b): The reference to § 93.113, which is to be deleted as of September 16, 1993, is deleted.

Subpart N, Part 93: This subpart on the airport traffic area at the Sabre U.S. Army Heliport (Tennessee) is removed and reserved. On September 16, 1993, this airspace will become a Class D airspace area.

Subpart O, Part 93: This subpart on the Navy airport traffic area at Jacksonville, Florida, is removed and reserved. On September 16, 1993, this airspace will become three separate but adjoining Class D airspace areas.

Subpart R, Part 93: This subpart on the Special Air Traffic Rules at El Toro, California, is removed and reserved. On September 16, 1993, this airspace will become a part of the El Toro Class C airspace area.

§ 135.205(b): The reference to "uncontrolled airspace" is replaced with "Class G airspace." The reference to "control zones" is replaced with "within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport."

§ 139.323(a): The reference to "terminal control area" is replaced with "Class B airspace area."

§ 171.9(e)(1) and (e)(2): All references to "air traffic control areas" are replaced with "controlled airspace."

§ 171.29(d)(1) and (d)(2): All references to "air traffic control areas" are replaced with "controlled airspace."

§ 171.159(e)(1) and (e)(2): Both references to "air traffic control areas" are replaced with "controlled airspace." The reference to "air traffic control zones or areas" is replaced with "controlled airspace."

§ 171.209(d): Both references to "air traffic control areas" are replaced with "controlled airspace." The reference to "air traffic control zones or areas" is replaced with "controlled airspace."

§ 171.323(i): The reference to "air traffic control areas" is replaced with "controlled airspace." The reference to "air traffic control zones or areas" is replaced with "controlled airspace."

Obsolete Dates

Obsolete dates have been removed from §§ 91.215(b)(2), (b)(4), and (b)(5)(ii). Section 91.215(b)(5)(i)(A) is obsolete and is deleted. Section 91.215(b)(5)(i)(B) is incorporated into existing § 91.215(b)(5)(i).

Regulatory Evaluation Summary

This section summarizes the full regulatory evaluation prepared by the FAA that provides more detailed estimates of the economic consequences of this final rule regulatory action. This summary and the full evaluation quantify, to the extent practicable, estimated costs to the private sector, consumers, Federal, State and local governments, as well as anticipated benefits.

Executive Order 12291, dated February 17, 1981, directs Federal agencies to promulgate new regulations or modify existing regulations only if potential benefits to society for each regulatory change outweigh potential costs. The order also requires the preparation of a Regulatory Impact Analysis of all major rules except those responding to emergency situations or other narrowly defined exigencies. A major rule is one that is likely to result in an annual effect on the economy of $100 million or more, a major increase in consumer costs, a significant adverse effect on competition, or one that is highly controversial.

The FAA has determined that this rule is not major as defined in the executive order. Therefore, a full regulatory *analysis*, that includes the identification and evaluation of cost reducing alternatives

The regulatory evaluation examines the costs and benefits of this final rule to reclassify U.S. airspace. This rule is intended to simplify airspace designations, achieve international commonality of airspace designations, standardize equipment requirements and associate appropriate pilot certification requirements as well as certain other requirements associated with each proposed airspace designation. These changes are based primarily on recommendations from a National Airspace Review (NAR) task group and will ultimately allow for increased safety and efficiency in the U.S. airspace and air traffic control system.

Costs

The FAA estimates the total incremental cost that will accrue from the implementation of this final rule to be $1.9 million (discounted, in 1990 dollars). Virtually all cost, which is expected to be incurred by the FAA, will accrue from revisions to aeronautical charts, re-education of the pilot community, and revision of air traffic controller training courses. Each one of these factors is briefly discussed below:

1. Revisions to Aeronautical Charts

A significant cost impact associated with this rule will result from the requirement to change aeronautical charts. These modifications will be incorporated during the regular updating and printing of the charts. Therefore, all costs associated with printing aeronautical charts are assumed to be normal costs of doing business. However, because of dimension and symbol changes that will be needed, the plates used to print the charts will need to be changed, and this will affect most of the aeronautical charts printed.

The total cost of revisions to all charts is estimated by the National Ocean Service based on the summation of the costs of revising each class of the airspace. The total discounted cost is estimated to be $1.2 million.

2. Revision of Air Traffic Training Courses

Manuals, textbooks, and other training materials used to educate FAA controllers will need to be updated to reflect the airspace reclassification. According to the FAA Aeronautical Center in Oklahoma City, lesson plans, visual aids, handouts, laboratory exercises, and tests will need to be revised.

The cost of these revisions is determined by multiplying the total revision time by the hourly cost of the course manager making the changes. The course managers are level GS-14 (step 5) employees with an average loaded annual salary of $72,000. Assuming 2,080 hours per year, their average loaded hourly salary is $35. The cost of the course changes is estimated to be $43,000 (discounted). An additional cost of $10,000 (discounted) will accrue as the result of a one-week seminar and associated travel. This seminar will be necessary to educate course managers about the airspace reclassification. The total cost that will accrue from this factor is estimated to be $43,000 (discounted).

3. Re-education of the Pilot Community

Pilots who are presently certificated to operate in the U.S. airspace will need to become familiar with the airspace reclassification as the result of this rule. This task will be accomplished through a variety of publications, videotapes, and pilot meetings.

The FAA is considering the production of a videotape that will be provided as a public service to industry associations, such as AOPA, ALPA, and NBAA, to inform them of the airspace reclassification. This videotape could be shown at various association meetings to help re-educate the pilot community. The FAA's Office of Public Affairs estimates that the film will be 20 to 25 minutes long and could be produced at a cost of $75,000 (discounted).

The FAA is also considering the publication of an advisory circular (AC) which will document the new airspace classifications. The AC will be mailed to each registered pilot. It is estimated that one man-week at a level GS-14 (Step 5) will be required to draft the AC and obtain approval in the sponsoring organization, and one GS-14 man-week will be required to obtain FAA approval of the AC. The cost associated with 2 man-weeks at a level GS-14 needed to prepare the AC is estimated

Benefits

This final rule is expected to generate benefits in the form of enhanced safety and operational efficiency to the aviation community. These benefits are briefly described, in qualitative terms, below:

1. Increased Safety Due to Better Understanding and Simplification

The FAA believes that the simplified classification in this rule will reduce airspace complexity and thereby enhance safety. This airspace reclassification mirrors the new ICAO airspace designations, except there will not be a U.S. Class F airspace.

This rule also will increase safety in the U.S. since foreign pilots operating aircraft in U.S. airspace will be familiar with the airspace designations and classification system.

Another simplification which is expected to help increase airspace safety is the change that will correlate the class of controlled airspace currently termed a control zone to the airspace of the surrounding area. Currently, several types of airspace are designated around an airport, which makes it difficult for pilots and controllers to determine how the areas are classified and which requirements apply. After the reclassification, the terminology will be more explanatory.

The conversion of statute mile designations to nautical mile designations is intended to further simplify operations. Since the instruments on-board the aircraft are calibrated in nautical miles and aviation charts have representations in nautical miles, this change will eliminate the need for pilots to convert between nautical and statute miles. This simplification will help pilots and controllers to be better able to understand the airspace designations in Part 71.

2. Reduced Minimum Distance from Cloud Requirement

This airspace reclassification will designate TCAs as Class B airspace areas. The VFR minimum distance from clouds requirement in this airspace will also change. Currently this distance is 500 feet below, 1,000 feet above, and 2,000 feet horizontal. In Class B airspace, the rule will require that the minimum distance from clouds be "clear of clouds." This change will afford VFR traffic increased opportunities to fly in Class B airspace in more types of weather than they currently have in a TCA. Furthermore, there will be reduced requests for deviation from ATC instruction to maintain cloud clearance. This action will not threaten safety since all aircraft operating in Class B airspace are provided with the appropriate separation.

3. Operation Of Ultralight Vehicles

This rule incorporates NAR task group 1–7.2 recommendations and changes Part 103 to correspond to the new airspace designations found in Part 71. There will be no decrease in safety because there is not change in the type of airspace in which ultralights are permitted to fly or operate.

Conclusion

Despite the fact that benefits are *not* quantifiable in monetary terms, the FAA, nonetheless, concludes that the benefits of this rule are expected to outweigh its expected costs.

International Trade Impact Assessment

Since this rule will not affect airspace outside the United States for which the United States is responsible, it is not expected to impose any new operating requirement in that airspace. As such, it will have no affect on the sale of foreign aviation products or services in the United States, nor will it affect the sale of U. S. products or services in foreign countries.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily and disproportionately burdened by government regulations. The RFA requires agencies

a significant cost impact on a substantial number of small entities.

FEDERALISM IMPLICATIONS

The amendments in this final rule will not have substantial direct effect on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that these amendments will not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

PAPERWORK REDUCTION ACT

In accordance with the Paperwork Reduction Act of 1980 (Pub L. 96-511), there are no requirements for information collection associated with this rule.

CONCLUSION

For reasons discussed in the preamble, and based on the findings in the Regulatory Evaluation Determination and the International Trade Impact Analysis, the FAA has determined that these amendments do not qualify as a major rule under Executive Order 12291. In addition, the FAA certifies that these amendments will not have a significant economic effect on a substantial number of small business entities under the criteria of the Regulatory Flexibility Act. These amendments are considered significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). A regulatory evaluation of these amendments, including a Regulatory Flexibility Determination and Trade Impact Analysis, has been placed in its entirety in the regulatory docket. A copy may be obtained by contacting the person identified under *"FOR FURTHER INFORMATION CONTACT."*

CROSS REFERENCE

To identify where existing regulations for Part 75 are relocated in existing Part 71, the following cross reference lists are provided:

CROSS REFERENCE TABLE

Old Section	New Section
75.1	71.601
75.11	71.603
75.13	71.605
75.17	Deleted
75.100	71.607
75.400	71.609

New Section	Old Section
71.601	75.1
71.603	75.11
71.605	75.13
71.607	75.100
71.609	75.400

To identify where existing regulations for Part 71 are relocated in the rule to be effective September 16, 1993, or if the regulations will be relocated in FAA Order 7400.9, the following cross reference lists are provided:

71.6	71.77
71.7	Deleted
71.9	71.71
71.11	Deleted
71.12	71.41
71.13	71.71
71.14	71.51
71.15	71.31
71.17	71.5
71.19	71.7
71.101	Subpart E of FAA Order 7400.9
71.103	Subpart E of FAA Order 7400.9
71.105	Subpart E of FAA Order 7400.9
71.107	Subpart E of FAA Order 7400.9
71.109	Subpart E of FAA Order 7400.9
71.121	71.79
71.123	Subpart E of FAA Order 7400.9
71.125	Subpart E of FAA Order 7400.9
71.127	Subpart E of FAA Order 7400.9
71.151	Subpart E of FAA Order 7400.9
71.161	71.71 and Subpart E of FAA Order 7400.9
71.163	71.71 and Subpart E of FAA Order 7400.9
71.165	Subpart E of FAA Order 7400.9
71.171	Subpart D or E of FAA Order 7400.9
71.181	Subpart E of FAA Order 7400.9
71.193	71.33
71.201	71.901
71.203	Subpart H of FAA Order 7400.9
71.207	Subpart H of FAA Order 7400.9
71.209	Subpart H of FAA Order 7400.9
71.211	Subpart H of FAA Order 7400.9
71.213	Subpart H of FAA Order 7400.9
71.215	Subpart H of FAA Order 7400.9
71.301	Subpart E of FAA Order 7400.9
71.401	Subpart B of FAA Order 7400.9
71.501	Subpart C of FAA Order 7400.9
71.601	Deleted
71.603	Subpart A of FAA Order 7400.9
71.605	Subpart A of FAA Order 7400.9
71.607	Subpart A of FAA Order 7400.9
71.609	Subpart A of FAA Order 7400.9

New Section	**Old Section**
71.1	71.1
71.5	71.17
71.7	71.19
71.9	New
71.31	71.15
71.33	71.193
71.41	71.12
71.51	71.14
71.61	New
71.71	71.9, 71.13, 71.161, 71.163
71.73	71.3
71.75	71.5
71.77	71.6
71.79	71.121
71.901	71.201

Subpart A	71.609
Subpart B	71.401
Subpart C	71.501
Subpart D or Subpart E	71.171
Subpart E	71.101
Subpart E	71.103
Subpart E	71.105
Subpart E	71.107
Subpart E	71.109
Subpart E	71.123
Subpart E	71.125
Subpart E	71.127
Subpart E	71.151
Subpart E	71.161
Subpart E	71.163
Subpart E	71.165
Subpart E	71.181
Subpart E	71.301
Subpart H	71.203
Subpart H	71.207
Subpart H	71.209
Subpart H	71.211
Subpart H	71.213
Subpart H	71.215

The Rule

In consideration of the foregoing, the Federal Aviation Administration amends SFAR 51-1, SFAR 60, SFAR 62, Parts 1, 11, 45, 61, 65, 71, 75, 91, 93, 101, 103, 105, 121, 127, 135, 137, 139, and 171 of Federal Aviation Regulations (14 CFR Parts 1, 11, 45, 61, 65, 71, 75, 91, 93, 101, 103, 105, 121, 127, 135, 137, 139, and 171).

The authority for Part 103 is revised to read as follows:

Authority: 49 U.S.C. app. 1348, 1354(a), 1421(a), 1422, and 1423; 49 U.S.C. 1655(c).

Subpart A—General

Source: Docket No. 21631 (47 FR 38776, 9/2/82) effective 10/4/82, for each subpart, unless otherwise noted.

§ 103.1 Applicability.

This part prescribes rules governing the operation of ultralight vehicles in the United States. For the purposes of this part, an ultralight vehicle is a vehicle that:

(a) Is used or intended to be used for manned operation in the air by a single occupant;

(b) Is used or intended to be used for recreation or sport purposes only;

(c) Does not have any U.S. or foreign airworthiness certificate; and

(d) If unpowered, weighs less than 155 pounds; or

(e) If powered:

(1) Weighs less than 254 pounds empty weight, excluding floats and safety devices which are intended for deployment in a potentially catastrophic situation;

(2) Has a fuel capacity not exceeding 5 U.S. gallons;

(3) Is not capable of more than 55 knots calibrated airspeed at full power in level flight; and

(4) Has a power-off stall speed which does not exceed 24 knots calibrated airspeed.

§ 103.3 Inspection requirements.

(a) Any person operating an ultralight vehicle under this part shall, upon request, allow the Administrator, or his designee, to inspect the vehicle to determine the applicability of this part.

(b) The pilot or operator of an ultralight vehicle must, upon request of the Administrator, furnish satisfactory evidence that the vehicle is subject only to the provisions of this part.

§ 103.5 Waivers.

No person may conduct operations that require a deviation from this part except under a written waiver issued by the Administrator.

§ 103.7 Certification and registration.

(a) Notwithstanding any other section pertaining to certification of aircraft or their parts or equipment, ultralight vehicles and their component parts and equipment are not required to meet the airworthiness certification standards specified for aircraft or to have certificates of airworthiness.

(b) Notwithstanding any other section pertaining to airman certification, operators of ultralight vehicles are not required to meet any aeronautical knowledge, age, or experience requirements to operate those vehicles or to have airman or medical certificates.

(c) Notwithstanding any other section pertaining to registration and marking of aircraft, ultralight vehicles are not required to be registered or to bear markings of any type.

Subpart B – Operating Rules

§ 103.9 Hazardous operations.

(a) No person may operate any ultralight vehicle in a manner that creates a hazard to other persons or property.

(b) No person may allow an object to be dropped from an ultralight vehicle if such action creates a hazard to other persons or property.

§ 103.11 Daylight operations.

(a) No person may operate an ultralight vehicle except between the hours of sunrise and sunset.

(b) Notwithstanding paragraph (a) of this section, ultralight vehicles may be operated during the twilight periods 30 minutes before official sunrise and 30 minutes after official sunset or, in Alaska, during the period of civil twilight as defined in the Air Almanac, if:

(1) The vehicle is equipped with an operating anticollision light visible for at least 3 statute miles; and

(2) All operations are conducted in uncontrolled airspace.

§ 103.13 Operation near aircraft; right-of-way rules.

(a) Each person operating an ultralight vehicle shall maintain vigilance so as to see and avoid aircraft and shall yield the right-of-way to all aircraft.

(b) No person may operate an ultralight vehicle in a manner that creates a collision hazard with respect to any aircraft.

(c) Powered ultralights shall yield the right-of-way to unpowered ultralights.

§ 103.15 Operations over congested areas.

No person may operate an ultralight vehicle over any congested area of a city, town, or settlement, or over any open air assembly of persons.

§ 103.17 Operations in certain airspace.

No person may operate an ultralight vehicle within an airport traffic area, control zone, airport radar service area, terminal control area, or positive control area unless that person has prior authorization from the air traffic control facility having jurisdiction over that airspace.

Docket No. 23708 (50 FR 9259) 3/6/85; (Amdt. 103–2, Eff. 3/14/85)

[No person may operate an ultralight vehicle within Class A, Class B, Class C, or Class D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport unless that person has prior authorization from the ATC facility having jurisdiction over that airspace.]

[(Amdt. 103–4, Eff. 9/16/93)]

§ 103.19 Operations in prohibited or restricted areas.

No person may operate an ultralight vehicle in prohibited or restricted areas unless that person has permission from the using or controlling agency, as appropriate.

§ 103.20 Flight restrictions in the proximity of certain areas designated by notice to airmen.

No person may operate an ultralight vehicle in areas designated in a Notice to Airmen under § 91.143 or § 91.141 of this chapter, unless authorized by ATC.

Docket No. 24454 (50 FR 4969) 2/5/85; (Amdt. 103–1, Eff. 2/5/85); (Amdt. 103–3, Eff. 8/18/90)

§ 103.21 Visual reference with the surface.

No person may operate an ultralight vehicle except by visual reference with the surface.

§ 103.23 Flight visibility and cloud clearance requirements.

No person may operate an ultralight vehicle when the flight visibility or distance from clouds is less than that in the following table, as appropriate:

More than 1,200 feet above the surface but less than 10,000 feet MSL.		
(1) Within controlled airspace	3	500 feet below, 1,000 feet above, 2,000 feet horizontal.
(2) Outside controlled airspace	1	500 feet below, 1,000 feet above, 2,000 feet horizontal.
More than 1,200 feet above the surface and at or above 10,000 feet MSL.	5	1,000 feet below, 1,000 feet above, 1 statute mile horizontal

[1] Statute miles.

§ 103.23 Flight visibility and cloud clearance requirements.

[No person may operate an ultralight vehicle when the flight visibility or distance from clouds is less than that in the table found below. All operations in Class A, Class B, Class C, and Class D airspace or Class E airspace designated for an airport must receive prior ATC authorization as required in § 103.17 of this part.

Airspace	*Flight Visibility*	*Distance from clouds*
Class A	*Not Applicable*	*Not Applicable.*
Class B	*3 statute miles*	*Clear of Clouds.*
Class C	*3 statute miles*	*500 feet below.* *1,000 feet above.* *2,000 feet horizontal.*
Class D	*3 statute miles*	*500 feet below.* *1,000 feet above.* *2,000 feet horizontal.*
Class E:		
Less than 10,000 feet MSL	*3 statute miles*	*500 feet below.* *1,000 feet above.* *2,000 feet horizontal.*
At or above 10,000 feet MSL	*5 statute miles*	*1,000 feet below.* *1,000 feet above.* *1 statute mile horizontal.*
Class G:		
1,200 feet or less above the surface (regardless of MSL altitude)	*1 statute mile*	*Clear of clouds.*
More than 1,200 feet above the surface but less than 10,000 feet MSL	*1 statute mile*	*500 feet below.* *1,000 feet above.* *2,000 feet horizontal.*
More than 1,200 feet above the surface and at or above 10,000 feet MSL	*5 statute miles*	*1,000 feet below.* *1,000 feet above.* *1 statute mile horizontal.]*

[(Amdt. 103–4, Eff. 9/16/93)]

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